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ABSTRACT

Environmental education (EE) courses and programs offered in grades K-12 in Hamilton County (Ohio) public, private, and parochial schools were surveyed by means of a questionnaire mailed to 67 district level administrators, principals, and teachers. Questionnaires were returned from 5 private, 4 parochial, and 27 public schools, representing a 57 percent response rate. Findings indicate a varied approach to EE in the Hamilton County schools. In terms of E. P. Hart's key characteristics of environmental education (1981), the local programs show evidence of being interdisciplinary, multilevel, and values clarifying. In addition, they: (1) have present and future orientation; (2) encourage activity participation and a team approach to teaching/learning and individualized learning; (3) provide productive student-teacher relationships, personal responsibility, and grouped interaction; (4) are community-oriented; (5) provide field studies; and (6) show flexible administrative organizational patterns. When evaluated in light of Hart's characteristics, they also show a lack of education process development, systems thinking, and urban field studies. In addition, little attempt at teacher education in EE concepts and issues was noted. One recommendation offered is to emphasize such areas as human population, urban ecology, marine education, energy consumption, and land use management in EE curricula. (JN)

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A SURVEY OF ENVIRONMENTAL EDUCATION IN HAMILTON COUNTY SCHOOLS (K - 12)

A Masters Project submitted to the
University of Cincinnati, College of Education, in partial fulfillment
of the requirements for the degree of
MASTERS OF SECONDARY EDUCATION, 1983

Submitted by Janice B. Garver
B.S. of Ed. Ohio University, 1963
June, 1983
Cincinnati, Ohio
Corrected and revised 7/84.

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DEDICATION

This Masters Project is dedicated to my loving family who, even though they have given me a long rope during the past two years of study, have still kept tugging on the line!

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CHAPTER I

INTRODUCTION

A. Personal Perspective

In the past twenty years, what personal experiences have lead me to propose this project? When I graduated from Ohio University in the early 60's the world was beginning to show signs of environmental concern. Rachel Carson's Silent Spring was published in 1962. Some said we had entered the Age of Ecology. A sixth grade teaching position included my first three years of resident outdoor camping as a regular part of public school curriculum. Living in Uganda for two years focused my attention on the varied uses and abuses of natural resources, a strikingly different climate, and cultural perspective.

Moving to the Rocky Mountain State of Colorado and touring throughout the U.S. in the following several years added to my appreciation of the diversity of our country's ecosystems. In the 70's nature study, learning of pioneer life, and other facets of outdoor education gained the attention of our country's schools. Saving the prairie was a topic of local enthusiasm west of Chicago where we had settled once again in the Midwest.

Some years later in Ohio as I lead teachers to design curriculum materials at the Cincinnati Zoo, our concern was "How can students be made aware of the interdependence of all living organisms including humans?" In the early 80's as I returned to full time graduate work at the University of Cincinnati in secondary science education, I learned that once again environmental education was changing its scope and emphasis. Environmental science has been evolving into a multi-disciplinary study which searches for general principles running through these many disciplines. As changes continue in our world and the knowledge explosion builds; I like many others, will be required to know more and more about more and more as a generalist, rather than more and more about less and less, as a specialist.

Today there is world-wide concern for the future of humankind because of the environmental problems which we as citizens of "spaceship earth" must face. Our decisions will directly effect the quality of life of ourselves and our progeny. The focus of this concern is aptly illuminated by Lynton K. Caldwell in Living in the Environment by G. Tyler Miller, Jr., 1982.

> "The environmental crisis is an outward manifestation of a crisis of mind and spirit. There could be no greater misconception of its meaning than to believe it to be concerned only with endangered wildlife, human-made ugliness, and pollution. These are part of it, but more importantly, the crisis is concerned with the kind of creatures we are and what we must become in order to survive."

How can I be most helpful to myself and others as I continue plans for my life's work? This masters project can be directed toward this purpose. As a future science educator, I can focus teachers' attention on the field of environmental education in the local schools at a time when funding and program cutbacks are prevalent. Awareness can be increased by requesting that environmental educators summarize their programs for themselves as they use the survey instrument to be designed for this project.

In addition this masters project may serve to culminate my science re-education and my master's coursework by giving me insight into the following aspects of environmental education:

1) What does current literature suggest is of utmost importance in effectively educating responsible environmental stewards?
2) What survey methods have previously uncovered the "real stuff" of successful programs?
3) What does the law require or entreat school districts to provide in the area of environmental education?
4) What funding sources are being used and overlooked for environmental science programming?

Finally from a professional perspective, this project will serve to introduce me to the characteristics of outstanding environmental education programs in the flesh and in current literature. This investigative process will serve well to make me an even more appealing candidate for employment in a district of my choice in the Greater Cincinnati area.

B. WORLD'S NEED FOR ENVIRONMENTALLY EDUCATED CITIZENS

Sometimes it takes traumatic events such as the OPEC oil embargo of 1973; seepage of hazardous industrial wastes in the Love Canal suburb of Niagara Falls, New York in 1977; or the break up of a super-tanker releasing vast quantities of oil such as the Amoco Cadiz off the coast of France in 1978 to finally get the public's attention. From these and other environmental problems, people learn that they are part of a "global village" which requires not only local, but national and international action. We are dependent upon other countries and affected by their policies or lack thereof. Environmental accidents rarely remain local in extent.

The United Nations Conference on the Human Environment held in Stockholm in 1972 suggested that environmental education (EE) be an obligatory and integrated component of school educational systems at all levels. When the Tbilisi Declaration was drafted during the 1977 Intergovernmental Conference on Environmental Education it set down guiding principles of EE. This UNESCO supported meeting held in Tbilisi, Georgia (USSR) called for the development of problem solvers who would be prepared to deal with both the quality of human life and the quality of the environment. E_E is to be socially relevant, using problem solving approaches with specific real local, regional, national and international situations. Students of EE are to develop investigative, evaluative and action skills by using them as well as learning about them. Opportunities to improve skills are to be offered through observation, data collection, analysis, hypothesizing, inferring, predicting, etc. Whereas in the past programs have stressed awareness, the Tbilisi Declaration calls for curriculum development which will emphasize problem investigation and solution skills.

United States Law PL 91-516, The Environmental Education Act of 1970, lifts up a "need for concerted efforts in educating citizens" about deterioration of the nation's environmental quality. Environmental education is defined by the law as an integrated process which deals with man's interrelationships with natural and manmade surroundings, including the relation of population growth, pollution, resource allocation and depletion, conservation, technology, urban and rural planning to the total human environment. It suggests that EE is the study of factors influencing ecosystems, mental and physical health, living and working conditions, decaying cities and population pressures. And finally EE is intended to promote awareness and understanding of the environment, our relationship to it, and concern and responsible action necessary to assure our survival and improve the quality of life.

In introductory remarks given at the 10th Annual Conference of the National Association of Environmental Education, educators were told that the current task was to move environmentally aware citizens to environmentally literate citizens. People need to adopt an ethic which spurs them into action. In addition it is essential that today's EE be interdisciplinary, borrowing from sociology, psychology, economics and ecology among other disciplines.

It is doubtful that all citizens will ever claim the expertise equal to technicians, scientists, or public executives; but each of us will be called upon to make decisions which will concern our environment. In addition to handling knowledge, a person will need to develop skills in logical reasoning. According to L.A. Iozzi (1981),speaking at the NAEE Conference, persons must function at the highest levels of cognitive development. This will enable them to analyze complex problems, to recognize and create perceptual and conceptual patterns and to link these patterns to expectations. Only with these skills then can one compare the expectations to the actual outcomes of the chosen decision. In addition the ability of conflict resolution will be a necessity for the environmentally literate citizen.

In the U.S. 70% of the population resides in 2% of the nation's land surface. The independent rural-oriented living familiar to our forebearers is now being replaced by a life style of urban and suburban perspective. We are at once more physically separated from the natural world and yet aware of environmental concerns. Popular attempts at the simple life, keeping fit, eating health foods, recycling, returning to the land suggest many "back to nature" attempts. Unfortunately this dabbling does not insure a thorough understanding of environmental processes, cycles and interdependence.

Susan Samson of the University of North Carolina Botanical Gardens at Chapel Hill (1981) charges that the U.S. population is really alienated further from the natural world with each succeeding generation. She suggests that as technology and transportation estrange us more and more from the envrionment, we need to be reintroduced to nature. The gardening, food storage, exercise, dealing with the elements experienced by our parents and grandparents have been replaced by fresh and processed foods available year round, and a sedentary culture inhabiting an artificial indoor envirnment. Swanson stresses the importance of teaching observational skills so that we can be reoriented to nature. A personal knowledge of nature is fundamental to solving environmental problems. Decisions for protection of the ecosystem can only appear as people assess their effect on the environment.

Yes, the world needs environmentally educated citizens to halt habitat destruction due to population increase, to save endangered species, to plan development, to make wise decisions for natural resources, to control pollution and noxious waste production affecting food chains and water supplies. It is of utmost importance that individuals and groups perceive how their actions affect the natural world and how in turn it affects their life style.

C. DESIGN OF ENVIRONMENTAL EDUCATION PROGRAMS TO MEET WORLD NEEDS

The guiding principles of Environmental Education as outlined in the Tbilisi Declaration, (Hungerford, 1980) will be used in this section to help organize various writers' descriptions of necessary EE program characteristics.

Environmental education should:

1. consider the environment in its totality - natural and built, technological and social (economic, political, cultural-historical, moral, esthetic);

Mendlind (1981) states that outdoor education (an important facet of EE) should be presented in a holistic sense. The curriculum must stress the inter-relationships of the basic ecological concepts. The study should not focus on isolated entities which surround a particular organism. In 1970 when Roth published his list of 111 concepts for Environmental Management Education, #1 was - Living things are interdependent with one another and their environment. A total of 315 respondents listed this concept as essential out of 348.

2. be a continuous lifelong process, beginning at the pre-school level and continuing through all formal and nonformal stages;

Educational implications given by Peterson (1982) in her master's thesis concerning developing environmental sensitivity state that "1) To gain the greatest degree of sensitivity, EE programs should begin working with participants at a young age. 2) EE programs may be more effective if they are conducted on a continuous basis. Involvement in short-term EE programs appears to have limited impact on environmental sensitivity development." Ages ten to twelve are especially receptive to EE (Mendlind, 1981). Iozzi (1981) urges us to develop and implement programs of congitive and moral development beginning at upper elementary grades and continuing through higher education.

3. be interdisciplinary [includes multidisciplinary] in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective;

Schaefer (1982) writes that the ultimate objective of environmental learning is to enable people to think reasonably about their environment. This he feels can be accomplished with environmental learning experiences offered on a continuing basis throughout life. To reach such an objective he wishes EE to be learned through an infusion approach. Then each discipline can use environmental activities to teach the knowledge and skills of that discipline.

4. examine major environmental issues from local, national, regional and international points of view so that students receive insights into environmental conditions in other geographical areas;

In his paper entitled "Toward a National Strategy for Environmental Education," (1979) William Stapp says that an "evolving goal of EE is to foster an environmentally literate global citizenry that will work together in building an acceptable quality of life for all people."

5. focus on current and potential environmental situations and international cooperation in the prevention and solution of environmental problems;

In "A Future Look at Environmental Education" (1978), DuShane and Hug speak of Whole Earth Education with learning activities whose foci are positive, global and future oriented. Whole Earth Education would enable people to behave as world citizens who balance caring for themselves, others and the world. In "Environmental Decision Making: The Public Challenge," Iozzi (1981) stresses that environmental curriculum must be futures-focused. He suggests the designs should concentrate attention on issues which will become important one to two decades in the future. However, Iozzi goes beyond the study of "current and potential" to past issues as well. He reasons that only through critical analysis of past and contemporary environmental concerns can we gain insight into any long range consequences and benefits of our decisions.

6. - explicitly consider environmental aspects in plans for development and growth;

Schoenfeld and Disinger (1977) felt EE programs which stressed consideration of the environment and human relations with it were successful. These programs included open-end options which encouraged environmental protection. They sought ultimate human performance within the carrying capacity of the Universe.

7. - enable learners to have a role in planning their learning experiences and provide an opportunity for making decisions and accepting their consequences;

According to Bonnie Woodall (1981) people are a part of the environment. Thus persons, or the learners, must be included in the study of EE. The environment affects our total well-being including our physical, social and emotional health. Environmental decision making and consequences directly affect the learner. Schaefer (1979) writes that a primary goal of EE is effective decision making. His "Dynamic Growth Cycle: An Environmental Education Learning Model" is based on the premise that one must know how policies are formed and possess an environmental ethic. Then decisions can be made as the product of policy and ethics. His growth cycle can facilitate instruction for all ages. It includes four stages: 1) Awareness - increasing recognition of self; 2) Stewardship - increasing commitment to act; 3) Adaptation - increasing willingness to alter life style; and 4) Responsibility - adoption of active role.

One completes the loop with action, and the cycle continues.

8. - relate environmental sensitivity, knowledge, problem-solving skills and values clarification to every age, but with special emphasis on environmental sensitivity to the learner's own community in early years;

Peterson(1982) writes that "Frequent contact with natural areas or open spaces seems to be necessary for environmental sensitivity to develope." Another point of hers is that "for some participants in the study, degradation of familiar areas had a profound effect on their sensitivity." Accordingly Peterson suggests that it could be important to focus EE programs on local issues and problems rather than outside the community or region. In 1973 Shifferd responded to the confusion within the American environmental movement. In his article "The Conceptual Chaos in Environmental Studies," he said people will only enter awareness of environmental problems at their own level. He suggested that school programs allow the person to become aware at his/her"favorite trout stream" and then be lead from there upward to four higher levels of concern.

9. - help learners discover the symptoms and real causes of environmental problems;

Continuing with Shifferd's reasoning then, one moves from Level I to Level V. Grasping each generalization fosters more awareness.

Level I of personal ecological niche, community. We consider our favorite trout stream.

Level II of pollution or degredation of particular environment. We consider wilderness versus civilization, i.e. development.

Level III of environmental quality only part of quality of life. We consider scientific versus technological interaction.

Level IV of organization of society. We consider the need for natural and social science balance.

Level V of man-nature totality. We consider the interdependence of both parts.

10. - emphasize the complexity of environmental problems and thus the need to develop critical thinking and problem-solving skills;

If we are sincere about involving the public in decision making in relation to complex EE issues, programs must do more than provide information. Students need to learn to think logically using critical analysis skills. In addition to cognitive growth, EE programs must foster development of mature moral/ethical reasoning skills (Iozzi, 1981).

11. - utilize diverse learning environments and a broad array of educational approaches to teaching/learning about and from the environment with due stress on practical activities and first-hand experience.
(Connect, vol. III, no. 1, January 1978, p. 3. as cited in Hungerford, 1980).

Iozzi (1981) closes his article on Environmental Decision Making with the statement that most people fail to develop wholly their cognitive and moral potential. Only through opportunities which offer action and involvement does growth occur according to him. Robert Roth (1978) reminds us of the diversity and success of Earth Day action programs in his editorial "On Coming of Age." "The first perception of environmental problems occurred within American colleges and universities and resulted in the massive response from students that will go down in history as "Earth Day 1970."

In summary then, to produce citizens ready to meet the world's needs, our environmental education programs must encompass:

1) the total environment;

2) a lifelong education process;

3) an interdisciplinary approach;

4) environmental issues at all levels and in all ecosystems;

5,6) past, present and future cooperative planning directed toward prevention and solution;

7) enabling of learner for decision making and consequence-acceptance;

8) sensitivity first to one's own community followed by growth of cognitive skills, problem solving skills and values clarification;

9) problem recognition at all levels;

10) critical thinking and moral reasoning enhancement; and finally

11) diversity of approaches and learning environments.

D. STUDY RATIONALE/STATEMENT OF PROBLEM

The major intent of this masters project is to determine the status of environmental education in the schools of Hamilton County, Ohio. One way of doing this would be to visit all schools, interview administrators and teachers, and make observations in classes or at special program or school sites. Within the confines of a little over a ten week university quarter a faster method is needed. Thus the idea of a survey questionnaire sent to private, parochial, and public school personnel was selected to expedite the process.

Further the study attempts to clarify what actually does constitute environmental education as it is evidenced in the courses and programs of Hamilton County K-12 schools. Environmental education itself is a young discipline whose advocates spend considerable time trying to fully define and characterize it (Roth, 1970; Hart, 1981; Townsend, 1982). Results of the survey conducted during this project may make it possible to see how well the Hamilton County concept of EE mirrors the national and international descriptions of this developing field of endeavor.

As early as 1974 Rubin and Schoenfeld wrote of the public need for correct information relating to government, science, business and academic environmental news. This request was made in an article entitled "Environmental Information: A Review and Appraisal." Another article by Stewart (1982) which appeared more recently in The Journal of Environmental Education implies a need for more than just information. In his opinion entitled "Empirical Research Reported in The Journal of Environmental Education: A Critique," Stewart calls for more thorough investigative research. Stewart suggests that in order to conduct research one must first understand the conceptual structure of the discipline; second, one must investigate selected events; third, one must make a set of knowledge claims which are a result of the combination of the first and second steps. This masters project will attempt to follow these guildelines in order to gain a "more data based understanding of the ways the world works" (Stewart, 1982, p. 42).

How does EE programming in Southwestern Ohio compare with that offered by other schools in Ohio or in the United States? This question is difficult to answer in depth. From the available literature, one study by Disinger (1981) "Environmental Education in the K-12 Schools: A National Survey" of 284 projects is illuminating. The programs of ten Ohio schools are included, one of which is located in Hamilton County. Following the completion of a computer search of ERIC which produced 163 bibliographic citations only four articles were found describing K-12 EE programs. Two of these sources were published in local journals (Hoosier Science Teacher and The Communicator: New York State Outdoor Education Publication) which could not be obtained through the University of Cincinnati Main Library retrieval services. Thus finding out what actually is going on in Hamilton County is important because there are so few documented studies of comparable programs available.

Another question which arises from the previous one is whether or not there is some pattern of the placement of EE courses and programs. Does attention to environmental education relate to state support, funding sources, types of school, school grade levels, urban or suburban location or particular personnel policies?

According to Disinger and Bousquet (1982) because the United States Constitution does not clearly assign educational concerns to the federal government, it is the states' responsibility. Under the terms of the Tenth Amendment, states are directed to oversee control and administration of education. States share these educational rights with the local community entities. States are to be held directly accountable to their citizens. In order "to promote the general welfare," educational activities are also supported by the federal government. In addition federal agencies also offer educational help in relation to their mandated responsibility. This study wishes to look at the State of Ohio's support of environmental education as it compares to other states.

This project has been conceived to determine the health of EE in Hamilton County. The decade of 1968-78 was a very active one for this discipline (Hart, 1981) on a national and worldwide scope. We are midway through another decade. This study wishes to ascertain how Hamilton County educators perceive their progress in EE. What has occurred in their courses and programs in the past and present? What do they suggest will impact most on their programs in the future?

Finally, Greater Cincinnati has a wealth of community resources. Many of them direct their efforts towards environmental education. Possibly schools which do not offer their own options for environmental studies rely on their community agencies to teach these concepts to their students. Thus another rationale for this study will be to find out whether or not schools without specific EE programs take more field trips to community learning centers than schools with EE programs. Or the reverse of this may be true. Schools with EE programs may rely more heavily on community resources to supplement their existing programs.

E. PROPOSED STUDY

In summary then, of the above mentioned needs and problems, this masters project is designed to survey environmental education courses and programs offered in K-12 Hamilton County, Ohio, public, private, and parochial schools. A mailed survey questionnaire will be used to gain information and opinion from educators about their environmental education emphases or lack thereof. The questionnaire, sent during the University of Cincinnati Spring Quarter, 1983, will be open to response from district level administrators, principals and teachers. Summary information from the survey instrument will be used to compare local perceptions of EE with those of others as described in current environmental documents. Patterns and trends will be sought in the data which may help to explain response to the entire survey and individual items. Following statistical analysis of the data, an effort will be made to draw conclusions and make value claims about the survey results. It is hoped that by sharing a summary of the survey results with interested respondents; environmental educators and others may be brought up to date with the current health of EE in the Greater Cincinnati Area.

CHAPTER II

SUMMARY OF RELATED LITERATURE

The review of environmental education literature undertaken for this study was directed toward three purposes: 1) to learn what successful EE programs should include; 2) to plan the design of the survey instrument; and 3) to compare the results of this survey with other published survey results. Other articles and data which directly relate to individual survey questions will be mentioned as each section of the actual instrument is discussed. Community Resource Responses complete this section.

A. LITERATURE REGARDING SUCCESSFUL ENVIRONMENTAL EDUCATION PROGRAMS

Ohioan Robert Roth, who is currently Associate Professor of EE in the School of Natural Resources at Ohio State University wrote in 1969 (as cited in Roth, 1973, p. 38) that"environmental education is concerned with developing a citizenry that is:

1) knowledgeable about the biophysical and sociocultural environments of which man is a part;
2) aware of environmental problems and management alternatives of use in solving those problems; and
3) motivated to act responsibly in developing diverse environments that are optimum for living a quality life."

Roth suggests that environmental education must deal with peoples' attitudes about themselves and others, both as individuals and as groups toward the environment. It should encourage respect of self, others and especially the earth. It is necessary for EE to have an interdisciplinary focus which embraces social studies, humanities, science and technology. Only in this way can it develop and provide motivation for cognitive understanding, belief and attitude change and behavioral change and action. Roth speaks out for teaching toward an "environmental literacy" at every point along the educational process.

The "Fundamental Concepts for Environmental Management Education (K-16)," also by Roth (1970), were printed in the first volume of The Journal of Environmental Education. These 111 concepts were carefully spelled out to clarify what environmental management concepts should be taught. These were to serve as a basis for making instructional decisions regarding content and grade level. Three hundred fifty professional people from forty specialty fields and twelve ecological zones were poled for input and ranking to establish this environmental taxonomy. The concepts were divided into areas relating to environmental management, management techniques, economy, environmental problems, environmental ecology, adaptations and evolution, natural resources, sociocultural environment, culture, politics, family, and psychological aspects.

This taxonomy of basic environmental education concepts was refined by Robert Townsend (1982) in "An Investigation into the Underlying Structure of the Domain of Environmental Education Concepts." With the help of an interdisciplinary panel of experts, Roth's 111 concepts were reduced to 54. Townsend then validated and determined the significance of the remaining concepts with the help of 200 university personnel and environmental organization members. Five factors were named as the underlying dimensions of the 54 EE concepts. Townsend believes that these can be used to provide a basis for the development of effective EE programs. These five factors include:

I. Ecology: Interdependence of Living Things

II. Culture: Interaction with Environmental Considerations

III. Ethics: Mankind's Moral Responsibility for Environmental Considerations

IV. Natural Resources: Management and Use

V. Population: Interaction with Environmental Conservation

Hart (1981) continued the work of focusing the discipline of EE in his "Identification of Key Characteristics of Environmental Education." He writes that unless the newly developing field of EE can better describe its theoretical foundations; people can continue to criticize its research. Making curriculum choices remains difficult as well, unless the principles of its framework are well grounded and defined. Instead of focusing on points of disagreement, his work sought areas of commonality within the discipline. He attempted to describe points of agreement in EE which were both identifiable and describable. Hart's research set up guidelines for ideas included in documents which had been published from 1966-78. To be considered a key concept of EE, the characteristic had to be stated as a core element by any of the following:

1) at least one major conference or workshop, recognized by a sponsoring agency at the national level;

2) at least 10 individuals or groups of individuals writing in refereed journals listed in CIJE or in published books which refer to journal articles in EE; or

3) at least 10 individuals or groups of individuals writing in articles abstracted in RIE or in published books which describe EE programs.

So to counteract research criticism and to give a basis for appropriate curriculum development, Hart published a list of 25 "Key Characteristics of Environmental Education." One of these characteristics is "Concepts." Thus Roth's or Townsend's list of concepts could be inserted in Hart's scheme. He describes the way in which EE should occur, rather than the basic tenets encompassed by the concepts of Roth and Townsend. Because Hart's research covers the ideas and writings of major groups and individuals, portrays repeated characteristics recorded in a twelve year period of active EE growth, and represents recent scholarly work in the field of EE; this author suggests it is a satisfactory standard against which to critique local environmental education programs. Current theory and practice in EE are exemplified by these characteristics. A more complete description of each is included in the Appendix, page 76.

Key Characteristics of Environmental Education (Hart, 1981)

1. Interdisciplinary
2. Multilevel
3. Global views
4. Concepts
5. Process development
6. Problem solving
7. Values clarifying
8. Systems thinking
9. First-hand experiences and activities
10. Environmental issue oriented
11. Present and future orientation
12. Active participation
13. Individual learning
14. Team approach to learning/teaching
15. New productive student-teacher relationships: Personal responsibility and group interaction
16. Community oriented
17. Field studies (urban and natural environments)
18. Communications networking
19. Coordination and cooperation: International, national, regional, and local
20. Flexible administrative organizational patterns
21. Reform of educational processes and systems
22. Curriculum development base
23. Curriculum evaluation base
24. Research base
25. Teacher education

Two other pertinent documents can emphasize additional appropriate concerns. One related to urban EE and the other to a Wilder Foundation

Report written by Cincinnati area residents.

In "Environmental Education in the Urban Setting: Rationale and Teaching Activities" Coon and Bowman (both Research Associates at the ERIC Center for Science, Mathematics, and Environmental Education at the Ohio State University)(1976, p. 5) remind us that "Less than two generations ago 70% of America's population lived on farms or in small villages. Today 70% of the people live in metropolitan areas where we find some concentrations of people as high as 70,000 per square mile in basically residential areas." We must concern ourselves with problems which are unique to our students' schools, communities, and larger governmental units. Urban EE is even more important today because of the cities' increasing populations.

Coon and Bowman chronicle the existence of few meaningful programs directed toward urban children. They claim that traditional subject matter crowds the instructional programs at all levels. Coon and Bowman say we are wrong to stress reading of text materials rather than allowing students to experience their environment or to discuss personal issues which effect student value decisions. They bemoan the fact that students are confined by the four walls of their classroom. These authors challenge teachers to involve students in fundamental urban questions such as "Who is responsible? Who cleans up? Who pays?" According to Coon and Bowman, teacher and administrator commitment is lacking to offer and encourage keeping an attractive and pleasant classroom and school environment.

Current educational thrusts such as individualization and dealing with an already crowded curriculum could be met by encouraging students to identify and study topics of their own choosing. These problems could be set within an overall theme of high school biology, within junior high American history, or within an elementary grade pioneer life study. In this way both personal and group awareness could be stimulated within an urban setting.

According to Dr. W.B. Clark, President of the Conservation Education Association (1969, as cited in Coon and Bowman, 1976, p. 10), the attitude of educational administrators and teachers is the key to successful EE programs. "The real key to success in these efforts is not the money, not the beautifully published materials, not the fancy camp facilities, not the specially-built laboratory facilities." It is attitudes.

With the reliable firmness of hundreds of authorities, Coon and Bowman recommend that today's education should result in:

1) changed behavior;
2) greater insight into issues where social values conflict; and
3) a commitment to improve our quality of life.

According to these experienced environmental educators, both parents and taxpayers heartily agree that the above criteria are the most important direction for our urban society. In summary, it is their conclusion that quality EE programs should be:

1) Action oriented
2) Concerned with values
3) Cooperative
4) Interdisciplinary and
5) Behaviorally oriented.

Ten years ago the Stephen H. Wilder Foundation of Cincinnati published a report entitled "A Community Approach to Outdoor Environmental Education Programs and Needs in the Cincinnati Area" (Carlson, 1973). It was the foundation's purpose to describe what was being done by community resources and schools to further the cause of EE in Cincinnati and environs. In addition the Wilder Foundation wished to point out where services were and were not available and to encourage cooperation among the reporting entities.

Completely in agreement with many of the previously mentioned sources in this masters report, the following needs for EE were cited to deal with the problems of the 70's in Metropolitan Cincinnati (Carlson, 1973).

1) Technology and funding
2) Change in attitude and behavior
3) Informed cooperation of individual and organization with Government to improve environmental conditions
4) Programs based on cognitive learning
5) Appreciation, sense of urgency, awareness, responsibility
6) Active participation in problem solving
7) Selection from alternative solutions
8) Opportunities for exploration, experimentation, participation in activities
9) Education for life beginning with the young
10) Education of all races and segments of society
11) Utilization of natural environments for direct, experiential learning

As one thinks back to visions and plans for EE included in the Introduction and Related Literature sections of this paper; much commonality of purpose is evident in international (Tbilisi Declaration), national (Tenth Annual NAEE Conference), state (writings of Ohioans Roth, Coon, Townsend, Hug), and local (Wilder Foundation Report) sources. Recognizing frequently repeated ideas from government, educational, conservation and community leaders presents a broad concensus about environmental education's needed direction. These ideas were turned into questions then for the survey instrument to ascertain how well Hamilton County schools have progressed toward reaching these EE goals.

Finally, James Richmond's "A National Survey of the Environmental Knowledge and Attitudes of Fifth Year Pupils in England" (1977) doctoral dissertation was a helpful model for making content decisions for this project. Ideas for introductory comments, study rationale and possible problems to investigate were stimulated by the reading of his work.

B. LITERATURE REGARDING DESIGN OF SURVEY INSTRUMENT

A review of available EE survey instruments pointed to the numerous surveys published by John Disinger, a Professor of EE at Ohio State University. Disinger has published "A Directory of Projects and Programs in EE for Elementary and Secondary Schools' in five editions, the most recent one completed in 1979. The purpose of these directories is to serve as a current source of information for program ideas and planning. The Indian Hill Exempted School Distirct's Outdoor Education Center and Resident Outdoor Education Program coordinated by Project Director R.C. Terwilligar, are two of ten Ohio-based programs outlined. Other Ohio programs described by Disinger are from Bexley, Centerville, Mansfield, Newark, Rocky River, Springfield, Warren and Westerville.

Disinger's survey instrument in the appendix of the 5th Edition (1979, pp. 831-36) was useful for phrasing questions about descriptors of EE, staff and consultant services, program history, objectives, teacher preparation, evaluation, and future plans. The sections describing materials (used, designed and implemented) were not included in this project's survey design.

The work of DuShane and Hug (1979), Environmental Education Occasional Paper #4 entitled "Forward to Fundamentals: The Complete Education" was the inspiration for survey questions relating to envrionmental themes, learning processes, learning climate and learner growth. Another one page document by John Hug, Consultant for Ohio Environmental Education, called "Learning Activities Outside the Classroom" was the basis for the field trip location question used in the survey instrument.

The "Environmental Education Needs Assessment and Evaluation Manual

Volume 2: Sample Instruments" by Lange (1981) proved a valuable current resource for finding out what surveys had previously been completed. Two instruments were especially appropriate models from Lange's manual. No doubt the original survey was published by the Research Division of National Education Association in 1970. Their instrument is entitled "Survey of Environmental, Conservation, and Outdoor Education." The second helpful survey closely resembling the NEA questionnaire was published by the Minnesota Environmental Education Council. The changes made by Minnesota to fit their state needs suggested directions more appropriate to the Hamilton County, Ohio, situation. Questions coming from these two sources used for this project's instrument relate to title of person completing the questionnaire, school district policies and funding, administrative responsibility and program operation details.

Additional survey questions were created in response to readings and conversations with community resource people and educators during the research phase of this project. As one reviews this project section it becomes clear that the State of Ohio has a wealth of active environmental experts involved in research, writing and teaching.

C. LITERATURE REVIEW TO COMPARE SURVEY RESULTS

Disinger summarized his "Environmental Education in the K-12 Schools: A National Survey" findings at the Tenth Annual NAEE Conference in 1981. Disinger concluded from the survey results that the 284 program directors were describing programs of broad scope. Respondents could select any number of the eight self-descriptions for their programs. Eighty-three percent of the educators selected EE: 73.6 % chose Conservation Education; 69%, Outdoor Education; 65.8%, Natural Resources; and 58.5%, Energy Education. The descriptors of Urban EE and Population Education and Marine Education received 27.5% and less. Disinger suggests these "newer topics" of concern have yet to receive the amount of attention given "traditional" areas. By far the greatest recognition of Marine Education occurs along the Atlantic and Gulf of Mexico coasts.

As to whether programs are multi or mono-disciplinary, Disinger found that of the responses, 59.4% described themselves as multi-disciplinary. Of the cases, 36.6% include social studies and science in combination. Twenty-two percent describe their multi-disciplinary approach as including social studies, science and the arts/humanities. Thirty-eight percent of the programs consider themselves as mono-disciplinary in approach.

Audiences targeted by the programs were both elementary and secondary for 37.7% and only elementary for 20.4% As far as funding sources are concerned, Disinger found that 37.7% of all respondents have previously or were presently receiving Title III or Title IV-C money from the Elementary and Secondary Education Act of 1965. Public and quasi-public agencies and organizations funded 21.5 % of the projects. State educational agencies and Business/industry funded 16.5 and 12.3% respectively.

In relation to evaluation of these EE programs Disinger (1981, p. 151) observed that the areas of conservation and outdoor education demonstrated "the least attention to evaluation, formal and non-formal." Disinger hinted that the K-12 evaluation which did occur was in response to continued need to justify outside funding as well as pressures for accountability. Where the primary focus of the project was determined by Disinger to be EE, (131 of 284) he noted 39.7% of the programs showed no evaluation; 51.9% reported "some" evaluation while only 8.4% used "formal" levels of evaluation. Disinger concludes that evaluation of program effectiveness has not been a priority of environmental educators.

Of the 161 of 284 programs housed in K-12 School or District, 60.9% offered consultant services and 70.2% offered in-service training for the teaching staff involved.

Disinger recognizes that his survey results do have the biases due to the selecting of only high-quality EE programs for response; a survey instrument which requested descriptive information and was thus open to interpretation; and a very large and diverse sample making rigorous comparative analysis impossible. He encourages further study of EE programs especially at the state level between state educational agencies and universities. His survey instrument could be used as a springboard for more in depth research.

"A Survey of Virginia Public School Principals on the State of Environmental Education" (Pettus, 1978) gives insight into a state based study such as Disinger suggests. The State Department of Education in Virginia Published EE guidelines in 1974 . Following a 1971 legislative mandate concerning EE, these guidelines were to promote K-12 interdisciplinary programs. This study set out to find what effect these guidelines, state support and university participation had had on these developing programs. Sixty percent of the 313 surveyed principals responded to the questionnaire. Seventy-two percent indicated their schools provide some type of EE training (Pettus, 1978, p. 36). According to grade level comparisons, more elementary principals reported EE than did secondary principals. Of these elementary schools, a higher percentage of schools under 800 enrollment had EE than did larger ones.

A majority of principals (88%) reported that regular classroom teachers were the coordinators of their EE programs. Science, then social studies teachers were most frequently involved. Students and parents were also planning participants at 30% and 10% respectively. Consultants were used more by larger schools with higher grade levels. In-service workshops and or courses were provided by 72% of the programs for their teachers.

Nearly 64% of the principals reported spending an hour or less of class time in EE per week. Promoting awareness of EE problems was the major emphasis according to 77% of the principals.

In a section on needs assessment, 60% of the principals felt their schools had adequate physical facilities in labs and outdoor areas for EE with principals of middle size and middle level schools showing the most satisfaction. A ranking of types of assistance needed to develop or further EE includes 66% for curriculum guides, 51% for development of instructional materials, 43% for personnel with EE training, 35% for financial aid from outside the school system, and 30% for community involvement/assistance (Pettus, 1978).

Pettus and Schwaab conclude that in Virginia much remains to be done in public schools. They see Virginians still viewing EE in a science-type, fact-oriented uni-dimensional approach. Awareness gets major attention rather than student attention to plan solutions or solve present and future problems. Pollution and energy problems were major foci in all schools as were population, economics, and interrelationship of ecosystem components in upper grade, large schools. These authors see progress since the Virginia State Legislature's mandate for EE. They report a continued need especially for materials, trained personnel, and funding to bring their state programs closer to envisioned goals.

A more recent state survey of K-12 principals is printed under the title "The Status of Environmental Education in Northern New York" (Tewksbury, 1982). In 1973 a New York State Temporary Commission for Youth Education in Conservation reported to the Governor and State Legislature. This study assesses problems of implementation and the extent of EE development since that commission's report was issued.

Of the 119 principals surveyed, 73% reported some type of EE now in their schools. In this study the authors found continuous K-12 offerings in EE rather than a dimished level in the upper grades as the Virginia study showed. A multi-disciplinary approach was reported by 36%, and interdisciplinary approach by 25%. Attitudes of concern for and awareness of environmental problems were emphasized by 83% of the programs. Action-oriented programs including solution planning were atested to by 28% of reporting principals. A striking 22% claimed they had the flexibility to carry out projects to alleviate environmental problems. Of these awareness based programs, 84% emphasize pollution; 82%, energy education; 68%, interrelationship of ecosystem components; 52%, human stewardship of earth;

30%, economics of environmental practices; and 27%, population education.

Less than one hour of class time per week is spent on EE according to 76% of the respondents. The curriculum was planned with the involvement of some teachers (62%), administrators (27%), students (7%), parents (2%) and professional consulting teams (8%). The actual teaching was accomplished by classroom teachers (96%). This leadership was offered by science teachers (60%), social studies teachers (31%), and other community citizens (9%).

No in-service in EE was provided according to 44% of principals reporting to Tewksbury. Class discussions were used to teach EE concepts by 91%. Other outdoor classroom exercises were reported by 64%; field trips and community resource visits are used by 60% and only 2% of those surveyed mentioned including any computer assisted instruction.

Tewksbury(1982) cites major impediments to the development of more comprehensive curricula in Northern New York State. These are --

1) Lack of time (63%)
2) Lack of funding (56%)
3) Difficulty with adding time for EE instruction to existing subjects (51%)
4) Lack of appropriate expertise (29%)
5) Lack of acceptance of EE by teachers (9%).

Recommendations to counteract these problems are mentioned by Tewksbury. She advises that more time would be spent on teaching EE concepts if they were further integrated into all subject areas. She learned that having a program in existence at a school does not insure the knowledge level about environmental concepts increases. The mere availability of outdoor facilities also doesn't increase environmental knowledge of of fifth graders whom she tested. According to her study results one hour is not sufficient to substantially enhance the level of environmental knowledge in school children. Thus Tewksbury concludes that both the Virginia programs (reported in this section) and the New York programs must be judged ineffective because of the small amount of time devoted to these programs in the schools each week.

The State of Kentucky is one of Ohio's southern neighbors. From her address to the Tenth Annual NAEE Conference concerning "Environmental Education in Kentucky (1981), Jackie Swigart points out that having a law requiring some form of EE and geographically-disbursed resource centers does not insure a successful program. She feels a key ingredient is the classroom teacher who brings the law and agencies within reach of the students. However, this author feels that the law is of extreme importance. It sets the standard or the tone toward which citizens can work.

As early as 1944 the Kentucky General Assembly passed the Kentucky Conservation Bill. The statutory language states that:

> "Instruction in all phases of environment shall be included in the curriculum of the public schools of Kentucky; and textbooks regarding the proper use and protection of forests, soils, water, minerals, wildlife and other aspects of the environment shall be prepared or selected by the State Textbook Commission for this purpose." (As cited in Swigart, 1981)

As revealed by Swigart, EE grew slowly in the 50's with assistance of 4-H Club, Conservation and Forestry Camps. In the 60's efforts were added by the Fish and Wildlife Camps. During the 1970's EE bloomed in Kentucky with the establishment of many EE resource centers throughout the state. In the 80's many state level agencies outside the classroom provide frequent assistance. In addition Swigart reports that many institutes of higher education continue to be involved in EE programs. Finally Swigart cites the participation of at least three federal agencies and over 30 private organizations which are in some way involved and dedicated to Kentucky environmental education efforts.

For the State of Ohio directives regarding environmental education are much less clear. Some may suggest, they are virtually non-existent especially with regard to school law. According to the Ohio Revised Code of Ohio School Law (Baker, 1981) this author could find the following passage which may be illuminating.

> Section 3313.60. Boards of Education.
> Courses of study requirred.
> Boards of education of county, exempted village, and city school districts shall prescribe a graded course of study for all schools under their control subject to the approval of the state board of education. In such graded courses of study there shall be included the study of the following subjects:...
> D) Natural science, including instruction in the conservation of natural resources;...

In the September 13, 1982, Proposed Minimum Standards for Ohio Schools prepared by the Standards Revision Advisory Committee, there is no mention of environmental education or related topics

Dr. John Hug shared further documentation about EE in Ohio with the author in April, 1984. An excerpt from the new Ohio Elementary and Secondary Standards (Effective July 1, 1983), 3301-35-02 Educational Program, states that:

> (b) Courses of study shall provide for the following topics to be a part of the curriculum: career education, citizenship, human relations education, multicultural education, energy and resource conservation education, and instruction in study skills.

Further information about the State of Ohio can be gleaned through Disinger's survey (1982) of EE specialists in state education agencies. In his overview of the state coordinators, Disinger notes that Ohio's coordinator has a 100% official assignment to EE. Only nine out of fifty other states have this total commitment. In previous surveys of 1974, 1977, and 1981, 100% of the Ohio State Coordinator's time was officially assigned to EE. For those three years, only six of fifty states had such a full time allocation for their coordinators. Disinger reminds us that this person is in a key position to influence EE in the state. He recommends that educators and others interested in furthering EE need to pay close attention to this state level environmental education coordinator.

An update from Dr. Hug's letter of April, 1984, corrects my preceding paragraph. "You should know as of July 1, 1982 the amount of time that I can devote to environmental education has decreased from 100 percent to 33 percent. Since that time I have also been responsible for science education and school evaluations. You may also know that the Ohio Department of Natural Resources has eliminated its fulltime environmental education position."

Further, two pages have been added to the Appendix (p. 99, 100) which represent actions taken by the State Board of Education of Ohio from 1970 and 1980 minutes regarding the Resolution on Environmental Education.

John Hug, Consultant for Environmental Education, is Ohio's Coordinator in the State Department of Education in Columbus, Ohio. He and an environmental educator from Wittenberg University in Springfield, Ohio, are in the process of conducting an Ohio statewide survey of EE programs. Results of their survey will be tabulated this summer of 1983. Initial impressions of the results, according to a phone conversation with Dr. Hug, suggest the following findings:

1) Most administration, supervision, development of EE programs is

not handled by district level coordinators who are paid directly to handle that job.

2) Most coordination is carried out by school principals and teachers.

3) Some few persons are given time away from regular teaching assignments to manage EE program coordination.

4) Some few persons have extra duty contracts to supervise EE programs.

D. COMMUNITY RESOURCE GOALS, OBJECTIVES AND PROGRAMS

Letters (Appendix, p.86) were directed to 15 Greater Cincinnati Community Resources to ascertain their own educational goals and objectives, designed to meet the needs of school groups. This author received communications from personnel at nine of these museums, parks and camps relating their program orientation (Appendix, p.98). The information presented in this section is to document what types of probable educational experiences occur when school groups take field trips to community resources. Quoted passages come directly from the materials received from these educators.

The Krohn Conservatory Park Board Volunteers offer two particular types of school programs. The In-School Plant Program is described as held in school classrooms and adapted to grade levels. "A team of two volunteers using plant material will visit the classroom to discuss with children the growth requirements, environmental adaptation and importance of plants to man." To familiarize school groups with the Display House features, a Tropical House, a Palm House, and a Desert Garden guided tours through the Conservatory are provided. The tour discussion covers plant identity, plant classification, climate adaptation and general care requirements.

The Cincinnati Museum of Natural History has a wealth of permanent and temporary exhibits. In addition school groups may participate in taylor-made tours about Reptiles, Fossils and The Universe. Members and non-members may enroll in Museum sponsored field trips, expeditions and classes. The description of one such class of appeal to very young children follows in "Science and Natural History Experiments" offered in the Spring of 1983.

> Ever wonder how scientists learn the things they do about our world? Now you can find out! We'll watch plants drink, race roaches, discover a microscopic world, home a pigeon and learn to use scientific instruments. This program will open young eyes to the mysteries of science.

In answer to the question, "Why a Zoo Visit?" the most recent Cincinnati Zoo School Services Pamphlet responds:

> First hand experiences like walking through a tropical rainforest filled with brilliantly colored butterflies, or seeing gorillas in a natural outdoor setting will spark a world of wonderment. Students exploring the Zoo cannot escape the education derived from viewing a vast variety of exotic animals, reading informative signs, and seeing exciting new exhibits. Using the materials and services outlined below can develop awareness, appreciation, understanding, and concern for our natural world.

In addition to the programming which one expects from a zoo, ours also offers school outreach programs, animal demonstrations and self guiding tours to integrate math, foreign languages and careers into the expected zoo topics of animal, plant and human interdependence.

The Cincinnati Recreation Commission has a stated Division Goal:

> To provide a program of outdoor and environmental education and recreation that will develop an appreciation, awareness and sense of preservation for natural resources and develop skills for adaptation to vocational and leisure pursuits for people of all ages.

The CRC's Division and Goal Justification states that:

> An understanding of our environment is critical to the survival of the human race on earth. Valued vocational and leisure pursuits improve the quality of life in our city.

During the calendar year ending July 31,1980, the Commission provided a total of 1,793 programs at its four Outdoor Education Centers. Of these 70% were either full or half day programs, the majority of which served school age youth.

Joy, A Resident Education Center and Summer Camp, is located northeast of Cincinnati in Clarksville, Ohio. "The Center serves an estimated 5,000 youngsters in an outdoor education program conducted in conjunction with 60 Cincinnati and suburban schools." As stated in its philosophy, the Joy Center is committed to achieve the following results with all who participate in programs at Joy:

1) Increased self-esteem.
2) Improved understanding of other people, particularly those of different race, creed, or economic background.
3) Enhanced awareness of their environment and their relationship to it.

The bad news from the City of Cincinnati Board of Park Commissioners is that they have no set list of programs. The good news is "we try to work with each teacher and his/her lesson plans." The programs are primarily oriented to natural history and include the following: General Nature Hikes on such topics as birds, insects and spiders, trees, wildflowers, rocks and minerals, wild edibles, fossils and historical geology. The Board also offers sensory awareness and discovery hikes. Their volunteers will assist school groups to learn about working with a topographic map and compass, nature crafts, care of wild animals, and the life of an Ohio Indian child as well as Ohio Indian/Pioneer history. Talks on energy conservation are infrequently given in comparison to other topics mentioned above.

Not many cities can boast a cemetery which offers educational tours, but Cincinnati can! Spring Grove Cemetery welcomes temporary and permanent visitors. Their volunteers work directly with each school group to design one hour tours on topics revealing a wide range of interests. These include Civil War Generals, Leaf Collecting, Grave Marker Rubbings, Population Census Data Collection and Death and Dying. After the tour is completed classes often remain to finish the field trip under their own teacher's direction.

According to the Assistant Chief Naturalist of the Hamilton County Park Distirct, 40,000 people yearly attend their hikes, talks and workshops. The bulk of these are school children. "Most of our programs are simple one hour slide talks, "suitcase talks" with museum specimens and live animals, or general hikes." The staff of naturalists and volunteers cooperate with each school or district in planning simple visits or more extensive lesson plans. This winter they began offering school maple sugaring hikes. Printed previsit teacher information regarding the maple sugar program includes facts about math, geography and history to enrich the outing. The general EE goals of the HCPD are "to increase enjoyment of the outdoors, improve attitudes toward the natural world, and educate the children regarding the workings of our environment."

"Outdoor education opens the door to students and reveals teachers as thinking, playing, learning, feeling, caring human beings." This sentence is part of YMCA Camp Campbell Gard's Objective Statement. The paper goes on to describe a two to five day experience designed to implement these general objectives:

1) To lead students toward a greater appreciation of the natural world and to foster their desire to enjoy and preserve their own natural surroundings.

2) To allow teachers to participate with their students in the outdoor setting and to tailor their time at Camp to compliment their own classroom experiences and objectives.

3) To help students learn to live responsibly with other students and adults from varied backgrounds.

4) To encourage openness and active participation in outdoor activities on the part of the students and teachers.

5) To give all students a chance to succeed in a non-graded environment.

6) To foster an attitude of inquiry in the student.

7) To give students a sense of independence and self-identity.

Campbell Gard class abstracts invite participation in Orienteering, Walk Through Time (Geology), Sewage Lagoon, Energy and Recycling to name a few. In Pioneer Classes students may become involved with Indian Games, Pioneer Tools, Applesauce, Corn Husk Dolls, or a Wilderness Journey, to highlight some of the catalogued choices.

To summarize common themes evident in Cincinnati Area Community Resource programming and goals, one may read the following points. In environmental education, nine responding community resources--

1) Offer individualized lesson plans adapted to each grade level to be used in the school or resource setting.

2) Provide multi-disciplinary approaches to learning.

3) Stress the importance of positive attitude change toward protecting the environment.

4) Encourage experiential, hands-on learning in all facets of the school curricula.

5) Present concrete learning experiences in a different environment from the school.

6) Serve both city and suburban youth of all ages, all year long, in programs of varied intent and form.

7) Enable students to glimpse the complexity and assets of their urban center and the greater world surrounding it.

8) Stimulate appreciation for an enjoyment of the natural world in educational and leisure time pursuits.

9) Place students and teachers in new, unique, leader/follower roles working together at learning.

These nine responses represent many of Cincinnati's outstanding school field trip destinations. Obviously not every available location presents such high quality educational offerings. Of course not every trip is a success. Nevertheless, any of the above themes enrich a school child's day.

CHAPTER III

DESIGN OF STUDY

A. INSTRUMENT DEVELOPMENT

The instrument for this study was designed over a period of six weeks. This process was helped along by phone conversations and letters exchanged with local and state environmental educators. A Database Search into ERIC at the Main University of Cincinnati Campus Library directed me to relevant literature bibliographic citations. Readings such as those detailed in Chapter II of this report stimulated ideas for survey items. Input from a computer instructor at Raymond Walters College pointed out questions which would need further reworking for ease of response analysis. Finally my Masters Project Committee Members reacted to the cover letter and the survey instrument in detail. Their critiques enabled the author to bring the questionnaire into its final form.

B. FINAL INSTRUMENT

A copy of the final instrument and cover letter can be found on pages 87-90 of the Appendix. Final typing, copying and mailing were handled through the University, a local copying company and the author. Sheet one (pages 1,2) was of yellow paper and designed for all individuals to complete. Sheets two (pages 3,4) and three (pages 5,6) were printed on green paper. Only those schools with courses or programs in EE were directed to complete all six pages. An explanation of this plan is in the introductory letter and on the survey instrument itself.

C. RELIABILITY OF INSTRUMENT

In that the instrument has been based on several other instruments designed by experienced researchers (Lange, 1981) and educators (Disinger, 1979, Richmond, 1977) it can be considered reliable. Further, the instrument was developed and improved over a period of time. The criticisms of a computer instructor and the project advisory committee, who have experience analyzing and sending past surveys, were taken into account.

In one respect the instrument's validity could be questioned. A fault of the survey is that adequate time has not been available to personally speak with or visit some of the survey respondents. This additional process could varify the instrument's ability to measure what it purposts to measure. Discrepancies about the individual interpretation of survey items may mean people respond very differently to the same question.

One of the most important features of the instrument was that it was responded to by educators who were "in the know" from each school or district. The survey encouraged reporting from those most closely related to EE. These varied "expert" responses from superintendents to classroom teachers add to the reliability and validity of this "Survey of EE in Hamilton County Schools (K-12)."

D. POPULATION

Hamilton County is located in the southwestern corner of Ohio, bordering on Kentucky and Indiana. The 1980 population of the county is recorded at 873,224 persons of which 385,457 reside within the city of Cincinnati itself. The 1980 Ohio Census statistics place the level of enrollment in kindergarten, elementary and high school at 181,639 students. Of those 67, 958 live within the city proper.

The survey was directed toward school personnel in Hamilton County who could respond from their perspective whether it be as teacher or superintendent, in a public, private or parochial school milieu.

E. DISPERSAL OF SURVEY AND DATA COLLECTION PROCEDURES

In order to determine the most knowledgeable recipients of the survey, calls were made to local school district administrative offices and the principals of private and parochial (religiously affiliated) schools. Conversations were also held with key science personnel in the Cincinnati Public Schools, Northwest Local School District and the Cincinnati Archdiocese. This was done to expedite the selection of instrument recipients. Otherwise when relying only on the Ohio School Directory (1982-83), the large numbers of schools made any logical choice of recipients impossible.

During the telephone call, this author explained that a survey of environmental education was planned. The phone call receiver was asked to suggest the person or persons in their school or district to whom the survey questionnaire should be directed (Appendix, p. 95). The descriptors of program intent listed in Survey Question #12 (Appendix, p. 89) were mentioned to the person during the phone call. These were given to broaden their initial idea of what EE might include. It was explained that an administrator, principal, or teacher could answer the survey form. Where districts were especially large it was suggested that several surveys at various grade levels be completed. In other situations high school social studies and science department heads were contacted along with an elementary supervisor. This was done to facilitate getting the survey to the most qualified respondent. Since much detailed information was sought, it was hoped that this dispersal system would provide for more thorough and accurate responses. This plan of distribution was also aimed at creating a survey population of approximately fifty replies.

Surveys and accompanying explanatory letters were mailed on April 28th. (Appendix, p. 87). Recipients were requested to send their completed questionnaires in the enclosed return envelopes by May 10th. When it became apparent on May 13th that less than half the surveys had been returned, phone calls were initiated to all persons who had not mailed back completed surveys. Twenty-six calls were completed by leaving reminder messages or speaking to the survey recipient. Thirty-one surveys of the sixty-seven sent (46%) were received by the Science and Environmental Education Center of Teachers College by May 20th when the data analysis was undertaken.

F. ANALYSIS OF DATA

Mr. Roger Abernathy, Instructor in Mathematics, at the Raymond Walters General and Technical College of the University of Cincinnati located in suburban Hamilton County kindly assisted the author in data analysis. Data from 31 surveys was entered into the IDA System. Simple statistical procedures to determine percent frequencies of response were completed for 25 of the 40 survey items. Chi-square tests to consider the probability distribution of responses were carried out for two sets of responses. Cross tabulations were completed to determine any relationships which might or might not be present between 1) the existence of a program and eight factors; and 2) the length of time the program was in existence and

and seven other factors. Responses to the remaining 15 survey items did not lend themselves to computer analysis and thus were tabulated by hand. The Survey Questions are #'s 12, 15, 16, 17, 18, 25, 27, 28, 29, 30, 33, 34, 35, 36, 39. They are tabulated on 15 responses which did have courses or programs rather than on all 31 surveys. Item #10 was also scored by hand but it represents all 31 survey responses.

IDA stands for Interactive Data Analysis, the name of the statistical package used to analyze the survey results.

CHAPTER IV

RESULTS AND DISCUSSION

A. ANALYSIS OF RESPONSE TO INSTRUMENT AS A WHOLE

A total of 67 surveys were mailed. The following table presents a detailed breakdown of the response pattern according to school type.

School Type	Surveys Mailed	Surveys Returned
Private	7	5
Parochial	15	4
Public	45	27

Within the 45 public school surveys sent, there were 23 districts represented. At least one response was received from 16 of the 23 districts. With 38 questionnaires returned, a 57% final response to the survey was achieved.

No doubt many factors could explain this response pattern to the questionnaire. One factor which may shed light on the subject is that a survey conducted on a state level by John Hug was ongoing during the same period. A number of his questions and this survey's questions were similar. Repetition may have dissuaded respondents from this survey. Three persons to whom the author spoke (from Finneytown, Indian Hill and Cincinnati Public Districts) mentioned having just completed the Ohio State survey.

One educator who previewed the questionnaire said he was put off by a survey which required the whole first page of negative responses to report his district's situation accurately.

Another phone call recipient, who directed the survey's sending for his district, said he found some items on the survey very difficult to complete. He felt that response accuracy would depend on the responder's devotion to EE and on the time available. In particular Survey Question #10, concerning field trips, demanded extra secretarial time to peruse district records for exact information in his opinion. This was one of the author's reasons for the freedom to direct surveys to the most well-informed and interested parties. It was hoped that they might more easily answer survey items correctly.

In analyzing response to the instrument, one other area may have had major impact. Surveys were received by the schools during May. For those involved with environmental education, the spring is often the busiest time of year. Further, most educational personnel have many end-of-the-year duties. A three page survey, requesting thought about 40 questions, from a stranger, may have been left till the last possible moment! All in all, the time period provided for completion of the questionnaire was quite short.

Seven additional surveys were received after the calculations had been completed thus these were not included in the reported statistical results. Pertinent comments from these 7 surveys were added where appropriate to enrich open-ended question responses. If these 7 surveys are added to the 31 received earlier, new totals become 20 with EE course(s) or program and 18 without.

B. ANALYSIS OF RESPONSE TO INDIVIDUAL SURVEY ITEMS

In this section survey items will be discussed in the order in which they appeared on the questionnaire. In the text, rounded figures will be given. A complete questionnaire with tabulated results can be found on pages 91-93 in the Appendix. Who completed the questionnaires? Dividing survey responses according to school location shows 77% suburban and 23% urban replies supplying information. Types of school responding were 68% public, 26% parochial (religious affiliation) and 6% private (independent). The presence of a specific course or a program in environmental education was reported by 48% and no program was reported by 52%.

The following then, are individual survey items with pertinent comments summarizing their contents.

3. Title of person completing survey form:
3.2% a_____Superintendent   0% e_____Social Studies Curriculum Consultant
16.1% b_____Curriculum Coordinator   25.8% f_____Science Teacher
0% c_____High School Principal   3.2% g_____Social Studies Teacher
12.9% d_____Elementary Principal   29.1% h_____Other Headmaster, Sci. Dept. Head, 2 elem.
9.7% e_____Science Curriculum Consultant   (Please specify).
teachers, 1 ODE teacher, 1 Voc. Agric. Sr. Instru

Almost 30% of the questionnaires were completed by persons not fitting any of the eight available title choices to question # 3. One quarter of the questionnaires were answered by science teachers, three of whom were also department heads. Curriculum consultants and elementary principals were another one quarter of the respondents.

SCHOOL DISTRICT INFORMATION

4. Does your School District or Non-Public School have an officially adopted, written policy on Environmental Education (EE)?
6.5% a_____Yes   If YES, please enclose a copy with your survey form.
83.9% b_____No
9.7% Not scorable or left blank. (N.S. abbreviation used on remainder of survey)

5. Is EE included as an item in your 1983-84 school (district) budget?
22.6% a_____Yes   If YES, what are the amounts for Capital outlay: $_____________
74.2% b_____No   Operating expenses: $_____________
.2% N.S.

6. Has any outside source contributed funds to your school (district)for EE?
16.1% a_____Yes   If YES, Source   Amount Received
80.6% b_____No
3.2% N.S.   _________________________   _____________

To summarize the school district information: 6% have written EE policies, 84% do not. There were 23% who have EE as an item in their 1983-84 school budget and 74% do not. Over 16% recorded having received funding from an outside source. Over eighty percent had not. Five respondents mentioned capital outlay funding of from $120 to $2000. These were budget items for such expenditures as those within biology and earth science classes, for per pupil costs, and for camp funding. Three persons mentioned budget line items of operating expenses from $250 a year to $40,000 which included two full time salaries and maintenance costs for a vocational education program. Five specific funding sources were listed which varied widely:

1) Teacher of individual course has responsibility for raising funds.
2) Parochial schools contribute funding to public schools which organize a sixth grade district-wide camping experience.
3) The Cincinnati Zoo provides daily support in the form of supplies and equipment for a CPS Natural Resources Management program housed there.
4) Anonymous individuals have built a small pond and given funding for garden project area.
5) Gift from the Westheimer Foundation.

7. Has anyone on your staff been assigned administrative responsibility for EE?

12.9% a_____Yes   If YES, please supply the following information for each
83.9% b_____No   administrator:
3.2% N.S.

1) Name ______________________

Title ______________________

Percent of time devoted to EE responsibility ______________________

Of the respondents, 13% have staff members assigned to administer EE. Percent of time devoted to this EE responsibility ranged from 2-5% for a headmaster to 75% for an Environmental Studies teacher both at private schools. In public schools one has a 25% time and another 100% time EE administrator.

8. Has your school (district) conducted teacher training sessions focused on Environmental Education?

22.6% a_____Yes If YES, give title of session(s). ____________

77.4% b_____No

Teacher training sessions were recorded by seven of the schools with EE programs. Twenty-three percent of the 31 respondents had had training programs offered in their districts or schools. No training in EE was offered at 77% of schools.

9. **Has the faculty or administration of your school (district) been approached by any of the following persons requesting attention be given EE in the school curriculum?**

16.1% **a_____Yes** **If YES, please check relevant source(s) of inquiry.**

74.2% **b_____No**

9.7% N.S.

1_____Students

2__1__Parents

3__3__Teachers

4__1__Member of environmental organization

5_____Local citizens

6__2__Others Soil Conservation Service, Zoo Person

Teachers, Soil Conservation Service and Zoo Personnel among others had approached the respondents about giving attention to EE in their curriculum (16%). No such overtures were reported by the remainder of the survey replies (84%).

10. **Please check all of the following sites which are visited by students from your school (district).**

a) Local Museum Collections

1_____Cin. Museum of Natural History/ Planetarium

2_____Cincinnati Zoo

3_____Civic Garden Center of G.C./ Hauck Botanical Gardens

4_____Eden Park Krohn Conservatory

5_____Fire Museum

6_____Taft Museum

7_____Warder Nursery

8_____Other Kentucky Land Between the Lakes
Chicago Museums
COSI (Columbus, Ohio)

b) Historical Sites

1_____Archeological dig

2_____Architectural site

3_____Battlefields

4_____Famous person site

5_____Cemetery

6_____Fort Ancient Museum & Park

7_____Invention site

8_____Sharon Woods Village

9_____Shawnee Lookout Field Museum

10_____Other Wright Patterson AFB Museu

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3 3 Teachers

4 1 Member of environmental organization

5_____Local citizens

6 2 Others Soil Conservation Service, Zoo Perso

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5_____Fire Museum

6_____Taft Museum

7_____Warder Nursery

8_____Other Kentucky Land Between the Lakes
Chicago Museums
COSI (Columbus, Ohio)

b) Historical Sites

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2_____Architectural site

3_____Battlefields

4_____Famous person site

5_____Cemetery

6_____Fort Ancient Museum & Park

7_____Invention site

8_____Sharon Woods Village

9_____Shawnee Lookout Field Museum

10_____Other Wright Patterson AFB Museu

c) Natural Environment

1_____School grounds
2_____School land laboratory
3_____Camp Campbell Gard
4_____Camp Joy
5_____Camp Kern
6_____Other Resident Outdoor Camp
7_____Cincinnati Nature Center
8_____Ohio River
9_____Local, neighborhood park
10_____City or County Park
11_____Heuston Woods State Park
12_____Other PWEEP at Miami Univ. Cin. Mus. Nat. Hist. Adams County Preserve

Cincinnati Park Board
13_____Burnet Woods Trailside Nature Center
14_____Caldwell Interpretive Center
15_____Mt. Airy Arboretum Center
Cincinnati Recreation Commission ODE Areas
16_____Avon Woods
17_____California Woods
18_____Dunham Woods
19_____La Boiteau Woods
Hamilton County Park District
20_____Embshoff Woods Nature Preserve
21_____Farbach-Werner Nature Preserve
22_____Withrow Nature Preserve

d) Centers of Everyday Life

1_____Business center
2_____Commercial center
3_____Communication center
4_____Community dump, land fill
5_____Hospital
6_____Industrial plant
7_____Long Branch Farm (CNC)
8_____Taft Sanitary Engineering Center
9_____Transportation center
10_____U.S. Environmental Protection Agency
11_____Utility company
12_____Other Court House, Ruoff Family Farm, Nursing Home, Reclamation Center (Water Works)

To summarize field trip information, the following details may be helpful. The 16 replies representing schools which do not have specific programs reported 173 field trip destinations. This averages to approximately 11 field trips per respondent. Sixty-three of these were recorded to "Natural Environments." Replies representing schools with EE programs (15) reported 187 field trips which averaged to 13 per respondent. The greatest number of theirs (74) was also recorded to "Natural Environments." Those responses representing no program in EE traveled more to "Local Museum Collections" and "Centers of Everyday Life" than did those with programs.

Three outstanding comments about field trips were included by respondents. "Last year my Summer Field Biology course members traveled 2,040 miles to over 50 'local sites' radiating out up to 75 miles from Reading," (Reading Community High School, public).

"We have an active Outdoor Program which sponsors such trips as canoeing, Okefenokee Swamp, diving in Florida with manatees, annual monitoring of warbler migration at Pointe Pelee, Canada, backpacking all over, etc...Also 9th Graders spend a week at Kampsville, Illinois, at Northwestern University's archeological field station," (Seven Hills Upper School, private).

"A Nature Trail has been developed behind one of the elementary schools as a result of city and school cooperation. Specimens have been labeled and materials for teaching have been developed. The trail is open to the public (North College Hill District, public). Although there is no elementary program of EE per se in this district, knowledge objectives and personal responsibilities connected with the environment are included in their Social Studies Course of Study." The respondent from College Hill concludes by saying, "Field trips are one method of developing the [above mentioned] objective concepts."

DESCRIPTION OF LOCAL PROGRAM

11. Which one of the following best describes the extent to which Environmental Education concepts are included within your school (district)?

12.9% a____Within one course
29.0% b____Within several courses
6.5% c____As a complete program
51.6% N.S.

12. Please check one or more of the following descriptors which best suit your program's intent.

[illegible]% a____Conservation Education
17% b____Ecology Education
10% c____Energy Education
19% d____Environmental Education
7% c____Environmental Literacy
l____Other descriptors: (below)

4% f____Marine Education
9% g____Natural Resources Education
10% h__•__Outdoor Education
4% i____Pioneer Education
6% j____Population Education
4% k____Urban Environmental Education

Local programs were described with the following statistics. Nearly 52% report no program. Of those who offer an EE program, 13% have one course, 29% have several courses and only 6% have a complete program. Descriptors selected most frequently explaining program intent were Environmental Education (19%), Ecology Education (17%), Conservation Education (11%) and both Energy and Outdoor Education (10%). Natural Resources Education was chosen 9% of the time with Envrionmental Literacy, Population Education, Marine, Pioneer, and Urban Environmental Education all receiving 7% or less.

13. How do you meet the state EE requirements as set forth in the new Minimum Standards for Ohio Schools? Choose one.

12.9% a_____No attempt as yet to meet standards.
0 % b_____Currently in the planning process.
19.4% c_____By infusion into existing curriculum.
0 % d_____By addition of separate courses.
3.2% e_____By development of special EE programs.
64.5% N.S.

The response to Survey Question #13 should be discounted because of the author's error. The question should have related to the 1981 Ohio Revised Code which is mentioned on page 34 of this report. There is no mention of EE in the new Minimum Standards for Ohio Schools.

14. During which of the following times is the program in operation? Check one or more.

a 15 Regular school week
b 1 School vacations
c 3 Weekends
d 4 Summer vacation
One school checked all

Of those 15 units reporting programs, all have regular school week programs. The next largest response was 4 for summer vacation. The Princeton City Schools offer weekend programs for adults in the community at their Outdoor Education Center. Seven Hills Outdoor Program functions during all suggested times in question #14.

15. What is the average number of hours/week each student spends in your program including field trips?

including field trips?	In the classroom	Outside the classroom
a) Elementary	< 2 hr/wk	< 2 hr/wk
b) Junior high	< 5 hr/wk	< 2 hr/wk
c) Senior high	<10 hr/wk	< 4 hr/wk

As far as time pupils spend in the program, the range was great. In classroom and outside classroom time for elementary pupils was figured to be less than 2 hours per week. Junior high students spent less than 5 hours per week in class and less than 2 hours per week out of class. Senior high programs showed in class time of less than 10 hours per week and were outside the classroom in EE programs less than 4 hours per week.

16. Circle the grade level(s) participating in the program.

K 1 2 3 4 5 6 7 8 9 10 11 12 Adult Ed Most participation in 7th, 9th, 10th, 11th, 1

17. Circle the grade level(s) where major program emphasis is placed.

K 1 2 3 4 5 6 7 8 9 10 11 12 Adult Ed Major emphasis in Grades 6,9,10.
Less emphasized in 3,4, 11, 12.

18. Who cooperates in teaching EE programs? Check one or more responses.

a 3 Non-school staff
b 14 School staff
c 4 Adult volunteers
d 2 Student volunteers

These hours of class time reflect the fact that the grade levels which have program participants most are 7th and 9-12th. Major program emphasis was described to be in grades 6,9 and 10. Grades 3, 4, 11 and 12 showed a lesser emphasis. Of those surveyed who have programs, 14 use school staff, 4 use adult volunteers, 3 use non-school staff, and 2 use student volunteers to cooperate in teaching EE.

19. Is your EE program designed with an interdisciplinary or multidisciplinary approach? Check one response which describes your program best.
3.2% a_____Interdisciplinary means the content of many disciplines is infused into an EE course or program.
19.4% b_____Multidisciplinary means EE concepts are presented within existing courses of the curriculum.
22.6% c_____Both inter- and multi-disciplinary approaches are applied.
0% d_____Neither approach is used.
54.8% N.S.

According to Survey Question #19 replies, 3% state that their program is Interdisciplinary, 19% responded Multidisciplinary, 23% included both and 55% of the respondents have no program or did not respond.

20. How does your program relate to other school classes, programs, or departments? Check one best descriptor.
22.6% a_____With independence, little or no association
3.2% b_____As clearinghouse of ideas for other teachers
3.2% c_____By assisting teachers in program development
6.5% d_____With programs to serve school and local community
12.9% e_____Other _______________
6% N.S.

The relationship between the course or program and the rest of the school was described by 23% as independent. In addition 13% check "Other" to this question. They qualified their position by mentioning relationship to the organization where the program was located, to other classroom learning, and with other school subject areas such as History and English. There was no response from over 51% of those surveyed to this question.

21. How is the content of your program determined? Check one best descriptor.
12.9% a_____According to Graded Course of Study
16.1% b_____By instructional team decision
12.9% c_____By individual teacher decision
0 % d_____By student decision
3.2% c_____By topical area of adopted textbook series.
54.8% N.S.

Of those surveys describing how content decisions are made, 13% said it was according to Graded Course of Study, 16% according to instructional team decision, and 13% according to individual teacher decision.

PROGRAM HISTORY (PAST, PRESENT AND FUTURE)

22. How long has your program been in existence?
19.4% a_____0-5 years   0% d_____16-20 years
22.6% b_____6-10 years   0% e_____over 21 years
3.2% c_____11-15 years   54.8% N.S.

Survey Questions in the next section relate to program history. Twenty-three percent recorded program existence in the 6-10 year length. There was a 19% response to 1-5 year length and only 3% to over 11-15 years. Approximately 55% did not reply to question #22.

23. How would you describe the current health of your program? Choose one.
6.5% a_____Growing   29.0% b_____Stable   6.5% c_____Shrinking
51.8% N.S.

24. Approximately how many students participate in the program?
19.4% a_____1-100   3.2% d_____301-400
9.7% b_____101-200   3.2% e_____401-500
3.2% c_____201-300   3.2% f_____501-1000
58.1% N.S.

"Stable" was the way 29% described their program. Both "Growing" and "Shrinking" received approximately 7% response. The overall perspective then suggests stability. Student participants are mainly in small programs. From 1-100 students received 19% and from 101-200 students received 10% of the responses. Fifty-eight percent of the 31 surveyed did not answer #24.

25. How has the program changed over the past five years with respect to facilities, consultant services, trained personnel and instructional materials?

____

In response to Survey Question #25, many aspects of program change were chronicled. Some reflected little or no change in five years. One said the program expanded but was now shrinking. One 9th grade course has been developed and become stable over the period. A summer program retains 80% of repeated format but changes 20% of content each year. One

6th grade camping program has grown from one to four elementary schools including both public and parochial. Another program reported a healthy explosion of participation, interest and growth in their Outdoor Program. In answer to a five year change in facilities, one mentioned several changes and another lack of receipt of promised support, money and facilities. There was one mention of increased use of consultant services and personnel changes.

Another respondent reports regarding consultant services. "During the first few years all activities were conducted by the Outdoor Education Specialist. Now most teachers plan activities on their own in their classrooms with the assistance of the ODE Specialist in addition to regular trips to the Princeton Nature Center. ODE is definitely becoming both inter- and multidisciplinary."

As far as instructional materials are concerned, respondents wrote of collection, improvement and improvisation occuring. The introduction of micro-computer simulations was also added in the past five years in the Cincinnati Public School program.

26. In the future, which one particular factor do you predict will have the greatest impact on the health of your program?
6.5% a_____Economic upturn and stability in Ohio and the Nation
9.7% b_____Increased citizen awareness and concern for the environment
12.9% c_____State Department of Education directive to devote more instructional time to EE
9.7% d_____Availability of trained personnel
0 % e_____Unforeseen environmental disaster.
0 % f_____Other ______________________________
61.3% N.S.

Of the 39% who addressed future concerns for their programs; 13% felt State Department of Education directives to devote more instructional time to EE would have the greatest impact on their program's health. "Availability of trained personnel" and "Increased citizen awareness and concern" both received 10%. Economic upturn was the variable selected by 7% of those questioned.

27. What is the program's overall purpose? (If you have a written statement of educational goals and grade level objectives, please enclose a copy with your response).

28. Please describe what you consider to be the program's major accomplishment during its existence.

Common themes link the overall purpose, goals and objectives of the school EE programs. Those mentioned most frequently are listed first.

1) To provide an awareness of the environment, ecological issues and interrelationships that exist within these.
2) To educate the student in basic energy and ecology issues so that they may make intelligent consumer and citizen decisions.
3) To become environmentally literate.
4) To be able to identify common species in the environment and to understand economic and ecological influence on human existence, of these species, past and present.
5) To develop awareness and appreciation for the out-of-doors while teaching scientific method and logical thought.
6) To grow in enjoyment, love, respect and understanding of environment in which student lives.
7) To encourage teaching/learning in varied settings where classroom skills can be applied.
8) To build community by offering a chance for students/teachers to get to know each other in a new environment.

Program accomplishments reflected the variety of their purposes. A 6th grade all-community residence camping program at Fort Scott Camp, Kentucky, (Southwest Local School District) was cited tc improve public relations, school spirit, and environmental studies, awareness and concern. The Seven Hills Upper School Outdoor Program accomplishes student motivation, experience in the environment and lends a source of pride to the students, program and school. The Cincinnati Public High School environment course meets a need by its existence and showing continued stable enrollment. The Cincinnati Zoo Natural Resources Managment program has enabled a close working relationship between the H.S. program and the Zoo's own education program. An appealing summer program for teens to learn, travel and enjoy themselves and others is the fullfilled purpose of Reading High School's Summer Field Biology class.

29. To what do you credit this success?

In Survey Question #29, program success was credited to many individually noted factors. Among these were perserverance, persistence, and resistance to discouraging events over the years. On the other end of the balance, enthusiasm, willingness, hard work, cooperation and creativity of students, parents, teachers, community members, school boards and administration were highlighted. A good summary comment was, "The combination of education and adventure in a non-competitive but challenging(outdoor)setting is very effective."

EDUCATIONAL SCOPE OF THE PROGRAM

30. What formal or informal procedures do you use to evaluate the program?

31. Do students receive a grade to evaluate their progress in your EE program?

25.8% **a_____Yes**
16.1% **b_____No**
58.1% N.S.

32. Is academic credit available for student participation in your program?

2[illegible]8% **a_____Yes**
16.1% **b_____No**
58.1%

The remaining part of the Survey relates to the Educational Scope of the Program. Questions 30,31, 32 deal with evaluation. The formal evaluation methods which were used included students being tested over daily labs and lecture materials. Teachers gave written evaluations and response when new parts of one curriculum were tried initially. Many more informal evaluation techniques were noted including surveys, discussions, feedback from all involved in activity. Other methods used surveying numbers of new and return participants and student quotations monitoring their opinions and reactions to events. Grades are given for 26% of the surveyed programs as is academic credit.

33. Does your program focus on one or a combination of the following environmental themes? Please check appropriate blanks.

10% a____Energy (prod., dist., use) 6% g____Land use planning
5% b____Environmental quality 13% h____Natural resource conservation
5% c____Food (prod., dist., use) 11% i____Maintenance of biological diversity
6% d____Population change 4% j____Maintenance of aesthetic environment
6% e____Escalating consumptive trend k____Human settlements 5%
6% f____Environmental economics 13% l____Ecology

Program foci are reported in descending order of importance: Environmental quality (15%), Natural resource conservation and Ecology (13%), Maintenance of biological diversity (11%) and Energy (10%). All other topics received 6% or less.

34. Do the learning processes employed in your program develop from one or more of the following teaching methods? Please check appropriate blanks.

21% a____Inductive (Discovery) teaching model d____Inquiry method 18%
21% b____Deductive (Expository) teaching model e____Systems approach with mathematical equations, simulation modeling and computer programs 9%
29% c____Varied teaching strategies with emphasis on 1) firsthand experience 2) issue resolution, and 3) problem solving f____Other ____________ 3%

Of the 15 surveys which described programs in EE, 29% use varied teaching strategies and 21% rely on either inductive or deductive teaching models, 18% use the inquiry method. One person included the portrayal of an innovative methodology which extends the unit of study to a meaningful outdoor setting. This method uses an "eco-wide" format stressing a small team approach and cooperation for discovery learning and task accomplishment. Community volunteers staff multiple learning centers through which the students rotate.

35. Which of the following descriptions best characterizes the learning climate which your program seeks to provide? Check appropriate blanks.
17% a_____Future orientation 13% d_____Value fair presentations
17% b_____Worldwide orientation 22% e_____Varied learning locales
30% c_____Positive orientation

Positive orientation is the focus of 30% of those with EE activities. Varied learning locales characterize the learning climate offered by 22%. Future and worldwide orientation were descriptors selected by 17% of those surveyed and 13% felt their learning climate offered value fair presentations.

36. Select items below which best characterize the expected learner growth resulting from your program. Choose one or more.
12% a_____Creativity enhancement 12% e_____Motivated action
29% b_____Attitude formation 24% f_____Cognitive growth
12% c_____Ethical development 0% g_____Other
12% d_____Moral development ______________________________

Attitude formation (29%) and cognitive growth (24%) represent the expected learner growth for over half the respondents who offer EE coursework. The four other options for expected learner growth were selected equally by 12% response. These include creativity enhancement, ethical and moral development and motivated action.

37. Does your school offer any student club(s) or extra-curricular activities in EE?

22.6% a_____Yes If YES, please specify level, title or description.

16.1% b_____No Level Title/Description

61.3% N.S.

38. Do any of the students exhibit noticeable leisure time, avocational, or vocational choice favoring environmental action after they complete the program?

25.8% a_____Yes If YES, please specify observed behavior.

9.7% b_____No

64.5% N.S.

Approximately one quarter of the 31 survey respondents offer extra-curricular activities and observe noticeable student behavior favoring some form of environmental action. Extra-curricular activities offered to elementary age students include weekend camping trip, school scouting program, an open-door nature room, a Science Club, an Outing Club and summer camp. High school students may avail themselves of Colerain Senior High Science Club, Princeton Ecology Club, FFA activities at the Cincinnati Zoo, or the Seven Hills Outdoor Program. The following are some of the observed behaviors noted by survey participants: student career program requests; student home gardens and visits to area community resources; interest in animal care; selection of EE for science fair projects; work at Zoo evenings and weekends; participate in after school taxonomy class; involvement in conservation camp such as Ohio Forestry Association; and seeking out opportunities for observation, study, river clean-up on wilderness outing.

39. Please indicate your relationship with the following organizations.

	Aware of	Member of	
a	3	1	Ohio Conservation and Outdoor Education Association
b	1	1	Ohio Alliance for Environmental Education
c	1		Ohio Interagency Committee for Environmental Education
d	3		National Association of Environmental Education

Some educators who completed the survey were aware of the four state and national EE organizations. Of the original 15 with EE activities at their schools, only two are actually members of the OCOEA and OAEE. This information completes the description of results to all computer and hand scored survey items.

C. RELATIONSHIP BETWEEN VARIABLES

Cross tabulations were completed with the IDA statistical package to compare the existence of an envrionmental education program or course(s) with variables such as school location (urban/suburban), type school (public, private, parochial), district policy for EE, budget item for EE, outside funds, EE administrative staff responsibility, teacher in-services, and the extent of the program (1 course, several courses, a program). The hypotheses that existence of a program and all of the variables above are statistically independent could be accepted in every case except one. That is school district budget item for EE. The cross tabulation for program versus budget item showed that the alternative hypothesis must be accepted in this one case alone. That is ...program and an EE budget item are not statistically independent. In fact according to the Chi-Square score for these two variables the assumption of independence does not hold. X^2 at the .05 level equals 5.991 whereas in this cross tabulation with 2 degrees of freedom, $X^2 = 10.11$. Seven surveys which said "Yes" to program and budget items while 15 surveys said "No" to both program and budget item.

A second set of cross tabs was run to look at the expected probability of responses to the length of time a program was in existence in comparison to such factors as the program's health, number of student participants, times in operation, evaluation by grade, evaluation by academic credit, extra-curricular activities and student action responses. In all cases it was found that high Chi Square values resulted showing that the alternative hypothesis would need to be accepted. As an example, how long the program has been in existence is not statistically independent from the program's health. The assumption of independence does not hold for any of the above variables and length of existence. There is a significant relationship then between the years of program's existence and program health as well as the other six factors mentioned above.

D. DISCUSSION OF RESULTS

This study differs from others in the literature because people with various educational titles and ties to EE replied rather than program directors (Disinger, 1981) or principals (Pettus, 1978; Tewksbury, 1982). The response rate to their surveys was higher (Disinger, 63%; Pettus, 60%; Tewksbury, 75%) than the 57% response rate of this survey. Considering the short time given to reply and the fact that the survey was made in the spring, the response rate is quite acceptable from the poled educators in Hamilton County.

In the Virginia and Northern New York Studies (Pettus, Tewksbury) over 70% of the principals report some type of EE. For those completing the Hamilton County Survey, 48% report at least one class or a more fully developed program. Both of these states have directives to include environmental education in their schools. Ohio does not have such a clearly defined statewide policy. In addition, one respondent from Indian Hills (listed in Disinger, 1981, with two Ohio EE programs) states, "We do not have an EE program defined as such — EE is part of various courses and has been" for over twenty years. Thus in considering the results of this survey it is important to recognize that EE is present in the curriculum of many Hamilton County Schools, even though there is no specific course or program with that title.

The next section of survey results relate to funding. Only 16% of those surveyed in Hamilton County were receiving funding from outside sources (all of which were local) as compared with nearly 40% of the programs surveyed on a national level (Disinger, 1981). The following correspondence from John Disinger to the author in April, 1984, may help to explain this difference in funding bases.

> "Your sampling of environmental education programs in Hamilton County was much more exhaustive than my national survey; the probability of programs without outside funding support appearing on my list was much less than on your list. I suspect that, in fact, your 16% figure is much more representative of actuality than is my 40% figure."

Both the Virginia and New York surveys mentioned funding needs to bring their state programs closer to envisioned goals. In Schoenfeld's (1977) analysis of successful EE programs he noted "cash" to be one of the two most important criteria. Of the numerous cross tabulations done in this study to find significant relationship between variables, school district budget item for EE and the presence of a program were found to be dependent variables. Thus we see locally a comparable need for funding concerns like those pointed out by the national and state surveys. According to Cook (1982) under the new Education Consolidation and Improvement Act of 1981, EE will be a legitimate program for states to finance. These moneys could be taken from education block grant funds. Cook hopes the availability of this funding will encourage program evaluation. The grants would be directed toward programs of proven value and high potential. At present no local programs revealed funding from any state or federal sources.

The findings of this survey with regard to administration of EE studies are very comparable to John Hug's preliminary findings for the State of Ohio mentioned on page 35 of this report. On the whole, even if persons have a direct assignment to administer EE it is often at a low priority level for the school or district.

How do we compare in the area of teacher in-service training? Program directors nationally report 70% in-service programs offered (Disinger, 1981). Over 70% was available for Virginia teachers and over 50% for Northern New York teachers. Survey respondents in Hamilton County report a low 23% of any in-service training offered on EE topics.

According to Lewis (1982) who surveyed useful instructional strategies which achieved positive tested results in classroom programs, teacher in-service training is valuable. He recorded a significant increase in student environmental awareness directly attributable to teacher in-service training prior to classroom sessions. Students may be influenced by first increasing teacher knowledge and understanding; thereby affecting a change in teacher behavior. This teacher behavior change in turn fostered increased student knowledge of the environment and developed positive environmental attitudes.

Quite a bit may be said about the response to the field trip question (#10) on this survey. Tewksbury (1982) reports that 60% of those surveyed in N.Y. State take field trips and make visits to community resources as an extension of their classroom programs. This survey revealed no such percentage figure. An average of over 11 trips for the 31 tabulated surveys returned suggests that even in a time of financial crisis, many schools still visit community resources.

An outstanding local example of this is the St. Bernard/Elmwood Place District which has no specific EE program at any level. As stated in their 1981-82 Annual Report, "The resources of Greater Cincinnati were visited extensively during the 1981-82 school year to extend experiences of students beyond the classroom." Ninety-five academic field trips were completed as the students traveled over 2438 miles. This averages to 26 miles round trip per destination. Evidently when funds permit, many schools would agree with St. Bernard/Elmwood Place District: "There is much to be learned and much to be taught outside of books and classroom. Learning is part of living and the school is but one part of the community." Falk's investigation of "Setting" and "Outdoor Field Trips" (1979) revealed a significant influence of certain factors associated with field trips on learning and behavior. More learning occured for 425 fifth and sixth graders who participated in outdoor science activities when the number of available examples of concepts to be learned and setting novelty were both maximized.

When one compares the common goals of the nine responding community resources (p. 40) with the common goals of local EE programs (p.59), similarities become evident. Both wish to increase enjoyment, awareness, appreciation, understanding and attitude change. Both recognize the benefits of turning teaching/learning roles upside down when students and teachers move into varied learning settings. The community resource learning themes are more targeted to concrete, experiential, hands-on, multidisciplinary, action approaches . They seem better equipped to teach about the community's and life's complexities. On the other hand, school goals appear to be directed toward a more practical emphasis of consumer and citizen education to speed environmental literacy and decision making.

Local selection of program descriptors match very closely those reported by Disinger (1981) in his national study. Neglected topics in Hamilton County, as nationally, are the more recent areas of concern such as Population and Urban E. Education. The fact that Cincinnati is located on the Ohio River and bordered by the Great Lake Erie, has had little effect on giving Marine Education any more attention in Ohio than it is given nationally.

Both Pettus and Tewksbury record student time in an EE class situation to be less than one hour per week. Although this survey revealed more hours than this at all levels, it must be remembered that these estimates represent information from only some surveys which have courses or programs. These figures would certainly drop to below the hour/week figure if all respondents had given time statistics.

In this Southwestern Ohio survey, all grades show EE participation. Major program emphasis was found to be in the high schools. The upper elementary grades showed a lesser emphasis. Therefore this survey reflects a new perspective unlike the Virginia survey which noted an elementary emphasis, or the N. New York survey which found continuous K-12 offerings more typical.

Hamilton County EE programs basically rely first on science teachers and other school staff, then on adult volunteers, non-school staff, and students to cooperate in leadership. This is similar to the report given of the Virginia situation.

The national, state, and local surveys all record some degree of multi- or inter-disciplinary focus. According to Schaefer (1979) the desired direction for students is toward informed decision making. This is most apt to happen with specific and continued experiences in EE. The infusion of EE concepts into many subject areas and many subject areas infused into EE will more readily accommodate student development. Coon (1976) in writing about Urban EE mentions "Interdisciplinary" as one element of quality programs. His point is that new courses are not needed to teach EE. Rather he encourages each teacher to take seriously his/her responsibility for teaching EE concepts throughout existing curricula. In this fashion a teacher acts out of expertise from his or her own perspective in a most effective way. Tewksbury (1982) reminds us that neither existence of program nor special EE facilities will guarantee increased student environmental knowledge. Rather it is the amount of time devoted to the study which is significant. Therefore she would concur that a move to integrate EE into all subject areas may in the end prove the most successful approach to raise student knowledge levels relating to EE concepts and issues.

Comparative information was not found in other studies about program histories with the exception of Disinger's directory (1981) which lists the local Indian Hill program. Some parts of it have been in existence since 1969. Only one other program in this survey has such a long history. Like the Virginia study which found EE programs more frequently in schools of less than 800, 25% of the EE studies in this survey were offered where there were 200 or less participants.

On a whole the Hamilton County programs are basically stable rather than growing or shrinking. There was a great deal of change occuring within each program. This is a healthy sign of life. Of all the roadblocks to possible success, lack of acceptance by teachers does not appear to be one of them. The factor selected to have the greatest future impact on program health would be a move from the Ohio State Department of Education for schools to devote more instructional time to EE. This relates well to the major impediments cited by Tewksbury (1982) in her N.Y. paper. Her survey respondents ranked issues impeding a comprehensive curricula of EE to be lack of time, funding and difficulty with adding time for EE instruction to existing subjects. This calls attention to the fact that even in a state, such as N.Y., where a Commission (1973) called for integration of EE into all subject areas at all grade levels; ten years later implementation problems still exist. According to Schoenfeld (1977) in his study of Public School and Public Action programs, there are two important criteria for successful EE programs. The first is "cash" and the second is "favorable climate of public and professional opinion in which to operate." Southwestern Ohioans appear to be held back by a modicum of both these criteria.

The remainder of the survey questions provide more descriptive material about program scope. In several of Disinger's reports (1979, 1981) he has noted very little evaluation being carried on by programs included in his national surveys. Many more informal than formal evaluation methods were reported by those surveyed locally. One quarter of the respondents do use grades and academic credit to measure student progress. Lucko (1982) calls for evaluations of entire programs, not just of student learning. His point is that with tightening budgets, if EE is to be considered a central priority item by any school, its value must be proven. There is no room in the curriculum for frills. Programs must be held accountable to community, funding agencies and students. O'Hearn (1982) further stresses a need for on-going evaluation of EE programming. He suggests that evaluation design must relate directly to the context in which it will be reported. Evaluation may be done by interviewing; by case study; by photo story; by sensing "grass roots" evidence such as attendance patterns, use of reference materials, etc. His advice is to suit the evaluation tool or method to the scope of the program to be evaluated.

What are the key environmental themes toward which programs are directed? Environmental quality, natural resource conservation, and ecology received the most frequent recognition by local educators. As revealed by Hungerford's four group survey (cited in Sacks, 1981), the two most environmentally knowledgeable groups perceived the same three issues to be most important. These were human overpopulation, energy consumption and land use management. These three program theme foci were rated as fifth, sixth and seventh place by this survey.

One of the most repeated ideas throughout EE literature is that teaching methods must be geared to involve all learners whatever their age, background or capacity. Thus varied approaches to teaching and learning are required. In this report refer back to the Tbilisi Declaration, on page 12 (Hungerford, 1980); Characteristics of EE (Hart, 1981) page 21, #5,6,8,9,12, 12, 12, 15 and 21; Coon and Bowman (1976) page 22-23; Carlson (1973) page 24, #6, 7, 8 and 11; and common Cicinnnati Area Community Resource goals, page 40, #4,4,6 and 9. These same ideas are stressed in many different ways in this report. Fortunately, those who filled out the questionnaires agreed. "Systems approach" was the only variable which was not chosen repeatedly. Frischknecht (1981) a previously visiting Swiss scholar at Michigan State University, writes that "Systems approach can enhance success and vitality in EE." This is so because use of systematic education encourages a spiral development of concepts and generalizations. It emphasizes importance of concepts central to EE; allows for a thematic approach to several disciplines around a central core; and enables understanding facts and their relationships to each other and the whole. As computers become a more integral part of school hardware, a systems approach may become more common as a teaching/learning method.

In "A Future Look at EE," Ohioans Hug and DuShane with others (1978) plead for learning activities focused on positive, global, and futuristic orientation. Iozzi (as cited in Sacks, p. 342, 1979) reminds us that society faces complex issues. Today's student will bear the responsibility to effectively and humanely deal with tomorrow's problems. The next quarter century will bring acceleration in rate of change, new technological and persistent food shortages according to futures forecasters and international leaders. Education for the future, to make ethically and morally sound decisions is imperative. Local educators expressed concern for these approaches as they selected "positive," worldwide," and "future orientation" as learning climate characteristics.

Values education is of ultimate importance today emphasizes Iozzi (as cited in Sacks, p. 343, 1979).

"--The question will not be 'can we' utilize the power of nuclear fusion to provide an almost limitless supply of energy despite its dangers, but rather, 'should we'?

"--The question will not be 'can we' modify weather,...colonize outer space or ocean depths,...or produce a 'Brave New World', but rather 'should we'?"

By selecting "attitude formation" (29%) and "cognitive growth" (24%), Hamilton County educators affirm that environmental problems are not just technological or scientific. They also have components necessitating value judgments. As local educators become aware of the need for learner growth in values, ethics, morals, and actions, these responses may increase from the 12% level of this survey. Pertinent findings from recent literature (Lucko, 1982) spotlight that:

1) Increased cognitive knowledge of environmental/energy terms resulted in changed behavior for most study participants according to Brown (as cited in Lucko).
2) Energy conservation instructional intervention had significant effect on attitudes and behaviors of high school students.
3) Curriculum project in Georgia in '76-77 seeking competencies in environmental problem solving and positive attitude changes found students capable of making more informed decisions requiring both knowledge and skills when social studies and science curriculum were coordinated into modular interdisciplinary environmental instruction in both courses.

Survey Questions # 36,37 and 38 all have components of environmental action. Although only one quarter of the replies offer extra-curricular outlets or affirmed observation of student action, much current literature applauds an action intent.

Larson (1982) writes that "A positive relationship was found in the statewide (Wisconsin) sample between environmental activism and reading magazines regularly, wanting to find out more about environmental issues, and reading news magazines and science/technical reports."

Peterson (1982) investigated variables which envrionmental educators selected as of prime importance in developing their own environmental sensitivity. These were such "Activities as exploring/playing in the out-of-doors as a child...involvement in youth organizations or group camping..."

Blum (1981) found that students who learned according to an experiential curriculum increased their leisure time activities (doing homework, reading, observing, growing, and experimenting with plants) related to envirnomental science curriculum.

In his paper "Student Eco-Activists Revisited..." Schoenfeld (as cited in Stapp, 1979), studied the long range consequences of active youth involvement in massive national environmental teach-ins and associated campus protests of 1967-70. Ten years after the first Earth Days, he found that E-Day activists remain environmental activists in life styles which represent a compromise between ecology and economics. The majority are now in social service or creative professions directly or indirectly associated with environmental studies. Their personal life styles reflect an ecological conscience.

This concludes the comments linking Hamilton County response to other studies reported in recent environmental education literature.

CHAPTER V

SUMMARY OF CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Now it is time to think about the "so whats" of this survey. Has anything been documented which can give us a basis for new directions? Yes. Hamilton County schools provide a varied approach to Environmental Education. In terms of Hart's "Key Characterisitcs of EE" on page 21; the results of this survey suggest that local programs show evidence of being Interdisciplinary, Multilevel, Global views, Concept orientation, Values clarifying, First-hand experiences and activities, and Environmental issue oriented. They have present and future orientation. They encourage active participation and a team approach to learning/teaching and individual learning. They provide productive student-teacher relationships, personal responsibility and group interaction. They are community oriented and provide field studies. Local programs show flexible administrative organizational patterns.

When evaluated in light of Hart's Characteristics they also show a lack of educational process development, systems thinking, urban field studies. There appears to be an absence of communications networking between schools, other districts, and community resources. Coordination and cooperation from local through the international level appears minimal. Few seem to be aware of what others are doing or to participate in cooperative ventures. Because of EE's failure to be more widespread in Hamilton County, one questions the accomplished reform of educational processes and systems, curriculum development and evaluation base, and research base presence which Hart describes as essential to meaningful EE programming. Little attempt at teacher education in environmental concepts and issues was reported by survey respondents.

Although the EE Act was signed into law by President Nixon in 1970, it was repealed effective September 30, 1982, during President Reagan's Administration (O,Hearn, 1982). This is indeed unfortunate for it provided both direction and support for EE programming.

Still there is much we can do. "EE is a vital force in our national education system. Continued efforts based on good evaluations can keep up the momentum," (Cook, 1982). Hamilton County educators can press the State of Ohio to speak out in behalf of needed EE State directives. We can become involved in local, regional and state organizations which can act to compel Ohio to fund EE programs under the 1981 Educational Consolidation and Improvement Act (Cook, 1982). John Hug, Ohio's part time consultant for EE in the State Department of Education needs to hear from us. In addition more private funding sources may be developed at the local level.

Ohio has outstanding leaders in EE in its Universities, Ohio State Department of Education, and in its Community Resources. Schools need to call upon these experts for leadership. More communications networking can be developed with school district cooperative teacher in-service training workshops, such as that offered by Wyoming, Indian Hill, Mariemont Districts in September, 1983. Cooperation can spur local progress for EE in October, 1983, by participation in the Third Annual Conference for Science Teachers sponsored by the Science Committee in Greater Cincinnati and the Science and Environmental Education Center at the University of Cincinnati. Such programs as those described for North Carolina (Mendlind, 1981) and for Kentucky (Swigart, 1981) can maximize cooperation between schools and universities and public and private agencies. They can work together toward achieving common EE goals. Both schools and community resources have their own fortes. Their combined work can heighten each others' success.

Although Ohio falls behind other reviewed states and national program accomplishments in most areas studied in this report; great initiative, commitment and progress is evident in Hamilton County EE programs. Public acceptance of EE according to Dunlap's "New Environmental Paradigm" (1978) is amazingly high. Let's take the initiative and bank on that ready support.

Hamilton County educators can be proud of the diverse, grass-roots programs which it has developed over the past 15 years. To keep us current and lead us into a healthy EE future, the results of my research produced some further recommendations. We need to update EE curriculum emphases to include areas of recent concern such as Human Population, Urban Ecology, Marine Education, Energy Consumption and Land Use Management. As much as possible we must seek to integrate EE into all grade levels and all curriculum areas so as to increase student time on task and to allow for raising student knowledge levels. It is appropriate to encourage all teachers to include EE issues in their own teaching and area of expertise. Environmental education can be further strengthened by the inclusion of varied teaching/learning approaches such as the use of computers and simulations. And finally our chances for establishing desired future citizen behaviors can be enhanced by offering environmental education clubs as extra-curricular action-oriented choices for our students today.

Finally if we want our students to live out what they learn, we must provide more opportunities for them to begin to solve current and future problems at all levels. Further, it is imperative that we offer action oriented options which may involve them at home, in their own schools and communities in a life-long, multidisciplinary approach to learning about the environment.

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Fall, 1981.

TABLE 1. Key Characteristics of Environmental Education

1. *Interdisciplinary:* Environmental education should be part of every subject taught.
2. *Multilevel:* Environmental education should be taught at all grade levels from kindergarten through grade twelve and beyond.
3. *Global views:* Environmental education involves the development of an integrated global environmental ethic.
4. *Concepts:* Environmental education entails awareness and understanding of basic ecological-environmental concepts (e.g., limiting factors, carrying capacity).
5. *Process development:* Environmental education involves development of cognitive, affective, and skill-behavior processes, especially for development of attitudes and values which motivate people to become involved in environmental problem solving.
6. *Problem solving:* Environmental education involves helping students develop processes of thinking which could be more effective in resolving complex environmental problems.
7. *Values clarifying:* Environmental education involves exploring personal assumptions, values, and feelings toward self and society as well as the relationship of these to the natural world.
8. *Systems thinking:* Environmental education implies that one must learn to think in terms of systems of interacting factors; that is, to think not only rationally about the parts of a complex system but to develop an intuitive feel for the dynamic behavior of such a system as a whole.
9. *First-hand experiences and activities:* Environmental education teaching requires a commitment to the development and utilization of all situations where learning can best be nurtured through first-hand experiences and activities which foster a deep respect and love for the natural world.
10. *Environmental issue oriented:* Environmental education entails use of local environmental issues, as well as case studies, role playing, simulations and games which provide opportunities to examine and participate in the complexities of decision making, understanding of personal and alternative values and the actual operation of systems—natural and man-made.
11. *Present and future orientation:* Environmental education does not exist in the reactive sense only but continually assesses the present and promotes an ideology which examines desirable images of the future.
12. *Active participation:* Environmental education emphasizes active participation in preventing and solving environmental problems.
13. *Individual leaning:* The breadth of environmental education and variety among students implies that individual learning programs involving certain degrees of independent study of a diverse number of interdisciplinary environmental problems will be appropriate.
14. *Team approach to teaching/learning:* Environmental education involves teacher participation in environmental problem-solving learning situations as team members.
15. *New productive student-teacher relationships: Personal responsibility and group interaction:* Environmental education places an emphasis on problem solving which implies many things including recognition of the values and biases of oneself and others and responsibility for working individually and collectively in a process of informed environmental decision making.
16. *Community oriented:* Environmental education involves the entire community as a learning environment in the achievement of environmental education objectives.
17. *Field studies (urban and natural environments):* Environmental education includes provision of field experiences—that group of first-hand experiences which are best suited to areas outside the classroom and school.
18. *Communications networking:* Environmental education entails communication skills as a process which can provide more complete and accurate images about environmental problems. It is important to understand how environmental information flows through networks linking the members of a system together.
19. *Coordination and cooperation: International, national, regional, and local:* Environmental education promotes the value of and necessity for local to international cooperation in the solution of environmental problems.
20. *Flexible administrative organizational patterns:* Institutional flexibility is required to cope with evaluation and provide adequate instruction, given the interdisciplinary problem-solving nature of environmental education.
21. *Reform of educational processes and systems:* Environmental education implies modification of existing educational structures.
22. *Curriculum development base:* Environmental education, because of its program component and support elements and strategies, implies active involvement in the development of new curricula.
23. *Curriculum evaluation base:* Evaluation is required for effective program development in environmental education so as to guide selection of adequate environmental education programs, examine all processes that lead toward achievement of intended outcomes, and judge its appropriateness for support or adoption.
24. *Research base:* Environmental education requires more objective evidence of its benefits and effects in order to buttress rhetoric with instances of success and failure.
25. *Teacher education:* Environmental education involves continued improvement in professional development through inservice and preservice channels to assist in the development of an environmental ethic.

BEST COPY AVAILABLE

103 Wentworth Avenue
Cincinnati, Ohio 45215
April 1, 1983

Mr. Terry Carroll
Camp Campbell Gard
4813 Augspurger Road
Hamilton, Ohio 45011

Dear Terry:

What Environmental Education Programs are currently being carried out in Hamilton County Schools? That is what I'd like to know; and so I have designed my Masters Project for this Spring Quarter at the University of Cincinnati to begin to answer that basic question. In mid April an Environmental Education Survey will be sent to all private and public schools or districts in Hamilton County. One of the individual questions which I'd like to have answered is whether or not classes are taking field trips to community resources such as yours. Another question deals with the objectives toward which such a field trip is directed.

Would you be willing to help me in two ways? First, do you offer educational programs to the schools of Hamilton County? If so, what are they? Secondly, if you do plan such programs, do you have a written statement of your educational goals and or objectives which you design your school programs to meet? Could you send me a copy of that written statement?

Thank you very much for your help. Because I am working within the constraints of a ten week quarter at the University, I would appreciate your speedy reply to my letter.

Sincerely yours,

Janice B. Garver

Janice B. Garver

University of Cincinnati

Curriculum and Instruction
and Vocational Education

Science and Environmental
Education Center

Teachers College (#2)
Cincinnati, Ohio 45221
Phone (513) 475-3561

May 1, 1983

Dear

You have been identified by someone in your district or by yourself as the one who is able to fully answer the enclosed Environmental Education Questionnaire. After looking over the actual survey instrument, if you feel that this form has come to you in error and there is someone who is the more appropriate respondent, would you kindly give this letter and form to them? Some large districts will be completing more than one questionnaire to allow for the reporting of different elementary, junior and senior high situations.*

Listening in on the evening news or reading a daily paper reminds us that our country lacks established priorities related to our environment. The silting up of Sharon Woods and Winton Woods Lakes, the proper disposal of toxic substances at Chem Dyne Corporation in Hamilton, and the lack of progress in completion of the Zimmer Nuclear Power Plant illustrate local environmental issues demanding our attention. After an extensive search through the environmental education literature, we have come to some tentative conclusions about what schools can and might be doing to prepare students to make wise environmental decisions. Are our perceptions accurate? Environmental Education courses and programs in other sections of the country have been surveyed. What actually is taking place in the schools within Hamilton County? In what special ways do Southwestern Ohio approaches seem comparable to or different from other school programs in Environmental Education? These are the questions we hope to answer with this study.

Please fill in the YELLOW sheet first. Then if your school/district has specific courses or programs in Environmental Education, please complete the more detailed two GREEN sheets. Return the questionnaires to us in the enclosed self-addressed stamped envelope. If you would like a copy of the survey results, please check #40 on the back of the green pages and be sure to include your address on the first yellow page.

Thank you very much for your help and timely reply. We would appreciate receiving your finished questionnaire form by May 10 in order to include it in the survey results. If you have any questions about completing the survey, please feel free to call Ms. Janice Garver at her home, 821-1278 or any of us at the college.

Sincerely yours,

Janice B. Garver
Research Project Assistant

Piyush Swami, Ed.D.
Assistant Professor

Thaddeus W. Fowler, Ed.D.
Associate Professor

*Others in your district receiving this questionnaire are:

BEST COPY AVAILABLE

Questionnaire for All Persons in
the Schools of Hamilton County, Ohio
May 1, 1983

Return to: Janice B. Garver
Science and Environmental
Education Center
Teachers College (#2)
Cincinnati, Ohio 45221

Environmental education is process aimed at producing a citizenry that is: 1. knowledgeable about the biophysical and sociocultural environments of which humans are a part, 1. aware of environmental problems and management alternatives of use in solving those problems, and 3. motivated to act responsibly in developing diverse environments that are optimal for living a quality of life.

1. Name of School ______________________________

District ____________________ Total Enrollment __________

2. Name of person reporting ____________________ Phone __________

Mailing address ____________________ Zip __________

3. Title of person completing survey form:

a_____ Superintendent
b_____ Curriculum Coordinator
c_____ High School Principal
d_____ Elementary Principal
e_____ Science Curriculum Consultant
e_____ Social Studies Curriculum Consultant
f_____ Science Teacher
g_____ Social Studies Teacher
h_____ Other ____________________
(Please specify).

SCHOOL DISTRICT INFORMATION

4. Does your School District or Non-Public School have an officially adopted, written policy on Environmental Education (EE)?
a_____ Yes If YES, please enclose a copy with your survey form.
b_____ No

5. Is EE included as an item in your 1983-84 school (district) budget?
a_____ Yes If YES, what are the amounts for Capital outlay: $__________
b_____ No Operating expenses: $__________

6. Has any outside source contributed funds to your school (district) for EE?
a_____ Yes If YES, Source Amount Received
b_____ No

Source	Amount Received
____________________	__________
____________________	__________

7. Has anyone on your staff been assigned administrative responsibility for EE?
a_____ Yes If YES, please supply the following information for each
b_____ No administrator:

1) Name ____________________

Title ____________________

Percent of time devoted to EE responsibility ____________________

8. Has your school (district) conducted teacher training sessions focused on Environmental Education?
a_____ Yes If YES, give title of session(s). ____________________
b_____ No

____

9. Has the faculty or administration of your school (district) been approached by any of the following persons requesting attention be given EE in the school curriculum?

a_____Yes
b_____No

If YES, please check relevant source(s) of inquiry.

1_____Students
2_____Parents
3_____Teachers
4_____Member of environmental organization
5_____Local citizens
6_____Others ______________________________

10. Please check all of the following sites which are visited by students from your school (district).

a) Local Museum Collections

1_____Cin. Museum of Natural History/ Planetarium
2_____Cincinnati Zoo
3_____Civic Garden Center of G.C./ Hauck Botanical Gardens
4_____Eden Park Krohn Conservatory
5_____Fire Museum
6_____Taft Museum
7_____Warder Nursery
8_____Other _________________________

b) Historical Sites

1_____Archeological dig
2_____Architectural site
3_____Battlefields
4_____Famous person site
5_____Cemetery
6_____Fort Ancient Museum & Park
7_____Invention site
8_____Sharon Woods Village
9_____Shawnee Lookout Field Museum
10_____Other ____________________

c) Natural Environment

1_____School grounds
2_____School land laboratory
3_____Camp Campbell Gard
4_____Camp Joy
5_____Camp Kern
6_____Other Resident Outdoor Camp
7_____Cincinnati Nature Center
8_____Ohio River
9_____Local, neighborhood park
10_____City or County Park
11_____Heuston Woods State Park
12_____Other ______________________

Cincinnati Park Board
13_____Burnet Woods Trailside Nature Center
14_____Caldwell Interpretive Center
15_____Mt. Airy Arboretum Center

Cincinnati Recreation Commission ODE Areas
16_____Avon Woods
17_____California Woods
18_____Dunham Woods
19_____La Boiteau Woods

Hamilton County Park District
20_____Embshoff Woods Nature Preserve
21_____Farbach-Werner Nature Preserve
22_____Withrow Nature Preserve

d) Centers of Everyday Life

1_____Business center
2_____Commercial center
3_____Communication center
4_____Community dump, land fill
5_____Hospital
6_____Industrial plant
7_____Long Branch Farm (CNC)
8_____Taft Sanitary Engineering Center
9_____Transportation center
10_____U.S. Environmental Protection Agency
11_____Utility company
12_____Other _______________________________

IF YOUR SCHOOL OFFERS COURSES OR A PROGRAM IN ENVIRONMENTAL EDUCATION, CONTINUE WITH THE TWO GREEN PAGES. IF NOT, YOU ARE FINISHED. PLEASE RETURN ALL OF THE QUESTIONNAIRE IN THE RETURN ENVELOPE. THANKS FOR YOUR ASSISTANCE.

Questionnaire for Persons with
Environmental Education Programs*

Return to: Janice B. Garver
Science and Environmental
Education Center
Teachers College (#2)
Cincinnati, Ohio 45221

DESCRIPTION OF LOCAL PROGRAM

11. Which one of the following best describes the extent to which Environmental Education concepts are included within your school (district)?
a_____Within one course
b_____Within several courses
c_____As a complete program

*Note: For the remainder of the questionnaire, the word PROGRAM is used. Please respond to all questions even if you have selected a or b in question #11 above.

12. Please check one or more of the following descriptors which best suit your program's intent.
a_____Conservation Education
b_____Ecology Education
c_____Energy Education
d_____Environmental Education
e_____Environmental Literacy
l_____Other descriptors: (below)
f_____Marine Education
g_____Natural Resources Education
h_____Outdoor Education
i_____Pioneer Education
j_____Population Education
k_____Urban Environmental Education

____

13. How do you meet the state EE requirements as set forth in the new Minimum Standards for Ohio Schools? Choose one.
a_____No attempt as yet to meet standards.
b_____Currently in the planning process.
c_____By infusion into existing curriculum.
d_____By addition of separate courses.
e_____By development of special EE programs.

14. During which of the following times is the program in operation? Check one or more.
a_____Regular school week
b_____School vacations
c_____Weekends
d_____Summer vacation

15. What is the average number of hours/week each student spends in your program including field trips?

	In the classroom	Outside the classroom
a) Elementary		
b) Junior high		
c) Senior high		

16. Circle the grade level(s) participating in the program.

K 1 2 3 4 5 6 7 8 9 10 11 12 Adult Ed

17. Circle the grade level(s) where major program emphasis is placed.

K 1 2 3 4 5 6 7 8 9 10 11 12 Adult Ed

18. Who cooperates in teaching EE programs? Check one or more responses.
a_____Non-school staff
b_____School staff
c_____Adult volunteers
d_____Student volunteers

19. Is your EE program designed with an interdisciplinary or multidisciplinary approach? Check one response which describes your program best.
    a_____Interdisciplinary means the content of many disciplines is infused into an EE course or program.
    b_____Multidisciplinary means EE concepts are presented within existing courses of the curriculum.
    c_____Both inter- and multi-disciplinary approaches are applied.
    d_____Neither approach is used.

20. How does your program relate to other school classes, programs, or departments? Check one best descriptor.
    a_____With independence, little or no association
    b_____As clearinghouse of ideas for other teachers
    c_____By assisting teachers in program development
    d_____With programs to serve school and local community
    e_____Other ______________________________

21. How is the content of your program determined? Check one best descriptor.
    a_____According to Graded Course of Study
    b_____By instructional team decision
    c_____By individual teacher decision
    d_____By student decision
    c_____By topical area of adopted textbook series.

PROGRAM HISTORY (PAST, PRESENT AND FUTURE)

22. How long has your program been in existence?
    a_____0-5 years
    b_____6-10 years
    c_____11-15 years
    d_____16-20 years
    e_____over 21 years

23. How would you describe the current health of your program? Choose one.
    a_____Growing b_____Stable c_____Shrinking

24. Approximately how many students participate in the program?
    a_____1-100
    b_____101-200
    c_____201-300
    d_____301-400
    e_____401-500
    f_____501-1000

25. How has the program changed over the past five years with respect to facilities, consultant services, trained personnel and instructional materials?

____

____

____

____

26. In the future, which one particular factor do you predict will have the greatest impact on the health of your program?
    a_____Economic upturn and stability in Ohio and the Nation
    b_____Increased citizen awareness and concern for the environment
    c_____State Department of Education directive to devote more instructional time to EE
    d_____Availability of trained personnel
    e_____Unforeseen environmental disaster.
    f_____Other ______________________________

27. What is the program's overall purpose? (If you have a writter statement of educational goals and grade level objectives, please enclose a copy with your response).

28. Please describe what you consider to be the program's major accomplishment during its existence.

29. To what do you credit this success?

EDUCATIONAL SCOPE OF THE PROGRAM

30. What formal or informal procedures do you use to evaluate the program?

31. Do students receive a grade to evaluate their progress in your EE program?
    a_____Yes
    b_____No

32. Is academic credit available for student participation in your program?
    a_____Yes
    b_____No

33. Does your program focus on one or a combination of the following environmental themes? Please check appropriate blanks.
    a_____Energy (prod., dist., use)
    b_____Environmental quality
    c_____Food (prod., dist., use)
    d_____Population change
    e_____Escalating consumptive trend
    f_____Environmental economics
    g_____Land use planning
    h_____Natural resource conservation
    i_____Maintenance of biological diversity
    j_____Maintenance of aesthetic environment
    k_____Human settlements
    l_____Ecology

34. Do the learning processes employed in your program develop from one or more of the following teaching methods? Please check appropriate blanks.
    a_____Inductive (Discovery) teaching model
    b_____Deductive (Expository) teaching model
    c_____Varied teaching strategies with emphasis on 1) firsthand experience 2) issue resolution, and 3) problem solving
    d_____Inquiry method
    e_____Systems approach with mathematical equations, simulation modeling and computer programs
    f_____Other ____________________

TABULATION OF SURVEY RESULTS

Questionnaire for All Persons in
the Schools of Hamilton County, Ohio
May 1, 1983

Return to: Janice B. Garver
Science and Environmental
Education Center
Teachers College (#2)
Cincinnati, Ohio 45221

Environmental education is process aimed at producing a citizenry that is: 1. knowledgeable about the biophysical and sociocultural environments of which humans are a part, 1. aware of environmental problems and management alternatives of use in solving those problems, and 3. motivated to act responsibly in developing diverse environments that are optimal for living a quality of life.

1. Name of School ______________________

District ______________________ Total Enrollment ____________

2. Name of person reporting ______________________ Phone ____________

Mailing address ______________________ Zip ____________

3. Title of person completing survey form:

3.2% a_____Superintendent
16.1% b_____Curriculum Coordinator
0% c_____High School Principal
12.9% d_____Elementary Principal
9.7% e_____Science Curriculum Consultant
0% e_____Social Studies Curriculum Consultant
25.8% f_____Science Teacher
3.2% g_____Social Studies Teacher
29.1% h_____Other Headmaster, Sci. Dept. Head, 2 elem.
(Please specify).
teachers, 1 ODE teacher, 1 Voc. Agric. Sr. Instructo

SCHOOL DISTRICT INFORMATION

4. Does your School District or Non-Public School have an officially adopted, written policy on Environmental Education (EE)?

6.5% a_____Yes If YES, please enclose a copy with your survey form.
83.9% b_____No
9.7% Not scorable or left blank. (N.S. abbreviation used on remainder of survey)

5. Is EE included as an item in your 1983-84 school (district) budget?

22.6% a_____Yes If YES, what are the amounts for Capital outlay: $____________
74.2% b_____No Operating expenses: $____________
3.2% N.S.

6. Has any outside source contributed funds to your school (district) for EE?

16.1% a_____Yes If YES, Source ______________ Amount Received ____________
80.6% b_____No
3.2% N.S.

7. Has anyone on your staff been assigned administrative responsibility for EE?

12.9% a_____Yes If YES, please supply the following information for each administrator:
83.9% b_____No
3.2% N.S.

1) Name ______________________

Title ______________________

Percent of time devoted to EE responsibility ______________________

8. Has your school (district) conducted teacher training sessions focused on Environmental Education?

22[illegible]% a_____Yes If YES, give title of session(s). ______________________
77.4% b_____No

9. Has the faculty or administration of your school (district) been approached by any of the following persons requesting attention be given EE in the school curriculum?

1% a_____Yes
74.2% b_____No
9.7% N.S.

If YES, please check relevant source(s) of inquiry.

1_____Students
2 1 Parents
3 3 Teachers
4 1 Member of environmental organization
5_____Local citizens
6 2 Others Soil Conservation Service, Zoo Personn

10. Please check all of the following sites which are visited by students from your school (district).

a) Local Museum Collections

1_____Cin. Museum of Natural History/ Planetarium
2_____Cincinnati Zoo
3_____Civic Garden Center of G.C./ Hauck Botanical Gardens
4_____Eden Park Krohn Conservatory
5_____Fire Museum
6_____Taft Museum
7_____Warder Nursery
8_____Other Kentucky Land Between the Lakes
Chicago Museums
COSI (Columbus, Ohio)

b) Historical Sites

1_____Archeological dig
2_____Architectural site
3_____Battlefields
4_____Famous person site
5_____Cemetery
6_____Fort Ancient Museum & Park
7_____Invention site
8_____Sharon Woods Village
9_____Shawnee Lookout Field Museum
10_____Other Wright Patterson AFB Museum

c) Natural Environment

1_____School grounds
2_____School land laboratory
3_____Camp Campbell Gard
4_____Camp Joy
5_____Camp Kern
6_____Other Resident Outdoor Camp
7_____Cincinnati Nature Center
8_____Ohio River
9_____Local, neighborhood park
10_____City or County Park
11_____Heuston Woods State Park
12_____Other PWEEP at Miami Univ.
Cin. Mus. Nat. Hist. Adams County Preserve

Cincinnati Park Board
13_____Burnet Woods Trailside Nature Center
14_____Caldwell Interpretive Center
15_____Mt. Airy Arboretum Center

Cincinnati Recreation Commission ODE Areas
16_____Avon Woods
17_____California Woods .
18_____Dunham Woods
19_____La Boiteau Woods

Hamilton County Park District
20_____Embshoff Woods Nature Preserve
21_____Farbach-Werner Nature Preserve
22_____Withrow Nature Preserve

d) Centers of Everyday Life

1_____Business center
2_____Commercial center
3_____Communication center
4_____Community dump, land fill
5_____Hospital
6_____Industrial plant
7_____Long Branch Farm (CNC)
8_____Taft Sanitary Engineering Center
9_____Transportation center
10_____U.S. Environmental Protection Agency
11_____Utility company
12_____Other Court House, Ruoff Family Farm, Nursing Home, Reclamation Center (Water Works)

IF YOUR SCHOOL OFFERS COURSES OR A PROGRAM IN ENVIRONMENTAL EDUCATION, CONTINUE WITH THE TWO GREEN PAGES. IF NOT, YOU ARE FINISHED. PLEASE RETURN ALL OF THE QUESTIONNAIRE IN THE RETURN ENVELOPE. THANKS FOR YOUR ASSISTANCE.

Questionnaire for Persons with
Environmental Education Programs*

Return to: Janice B. Garver
Science and Environmental
Education Center
Teachers College (#2)
Cincinnati, Ohio 45221

DESCRIPTION OF LOCAL PROGRAM

11. Which one of the following best describes the extent to which Environmental Education concepts are included within your school (district)?

12.9% a____Within one course
29.0% b____Within several courses
6.5% c____As a complete program
51.6% N.S.

*Note: For the remainder of the questionnaire, the word PROGRAM is used. Please respond to all questions even if you have selected a or b in question #11 above.

12. Please check one or more of the following descriptors which best suit your program's intent.

11% a____Conservation Education 4% f____Marine Education
17% b____Ecology Education 9% g____Natural Resources Education
10% c____Energy Education 10% h____Outdoor Education
19% d____Environmental Education 4% i____Pioneer Education
7% e____Environmental Literacy 6% j____Population Education
l____Other descriptors: (below) 4% k____Urban Environmental Education

____

13. How do you meet the state EE requirements as set forth in the new Minimum Standards for Ohio Schools? Choose one.

1[illegible]% a____No attempt as yet to meet standards.
[illegible]% b____Currently in the planning process.
[illegible]4% c____By infusion into existing curriculum.
0 % d____By addition of separate courses.
3.2% e____By development of special EE programs.
64.5% N.S.

14. During which of the following times is the program in operation? Check one or more.

a 15 Regular school week c 3 Weekends One school checked all 4.
b 1 School vacations d 4 Summer vacation

15. What is the average number of hours/week each student spends in your program including field trips?

	In the classroom	Outside the classroom
a) Elementary	< 2 hr/wk	< 2 hr/wk
b) Junior high	< 5 hr/wk	< 2 hr/wk
c) Senior high	<10 hr/wk	< 4 hr/wk

16. Circle the grade level('s) participating in the program.

K 1 2 3 4 5 6 7 8 9 10 11 12 Adult Ed Most participation in 7th, 9th, 10th, 11th, 12t

17. Circle the grade level(s) where major program emphasis is placed.

K 1 2 3 4 5 6 7 8 9 10 11 12 Adult Ed Major emphasis in Grades 6,9,10.
Less emphasized in 3,4, 11, 12.

18. Who cooperates in teaching EE programs? Check one or more responses.

a 3 Non-school staff c 4 Adult volunteers
b 14 School staff d 2 Student volunteers

19. Is your EE program designed with an interdisciplinary or multidisciplinary approach? Check one response which describes your program best.
3.2% a_____Interdisciplinary means the content of many disciplines is infused into an EE course or program.
19.4% b_____Multidisciplinary means EE concepts are presented within existing courses of the curriculum.
22.6% c_____Both inter- and multi-disciplinary approaches are applied.
0% d_____Neither approach is used.
54.8% N.S.

20. How does your program relate to other school classes, programs, or departments? Check one best descriptor.
22.6% a_____With independence, little or no association
3.2% b_____As clearinghouse of ideas for other teachers
3.2% c_____By assisting teachers in program development
6.5% d_____With programs to serve school and local community
12.9% e_____Other ______________________________
51.6% N.S.

21. How is the content of your program determined? Check one best descriptor.
12.9% a_____According to Graded Course of Study
16.1% b_____By instructional team decision
12.9% c_____By individual teacher decision
0 % d_____By student decision
3.2% c_____By topical area of adopted textbook series.
54.8% N.S.

PROGRAM HISTORY (PAST, PRESENT AND FUTURE)

22. How long has your program been in existence?
19.4% a_____0-5 years 0% d_____16-20 years
[illegible]6% b_____6-10 years 0% e_____over 21 years
3.2% c_____11-15 years 54.8% N.S.

23. How would you describe the current health of your program? Choose one.
6.5% a_____Growing 29.0% b_____Stable 6.5% c_____Shrinking
51.8% N.S.

24. Approximately how many students participate in the program?
19.4% a_____1-100 3.2% d_____301-400
9.7% b_____101-200 3.2% e_____401-500
3.2% c_____201-300 3.2% f_____501-1000
58.1% N.S.

25. How has the program changed over the past five years with respect to facilities, consultant services, trained personnel and instructional materials?

____

____

____

____

26. In the future, which one particular factor do you predict will have the greatest impact on the health of your program?
6.5% a_____Economic upturn and stability in Ohio and the Nation
[illegible]% b_____Increased citizen awareness and concern for the environment
12.9% c_____State Department of Education directive to devote more instructional time to EE
9.7% d_____Availability of trained personnel
0 % e_____Unforeseen environmental disaster.
0 % f_____Other ______________________________
61.3% N.S.

27. What is the program's overall purpose? (If you have a written statement of educational goals and grade level objectives, please enclose a copy with your response).

____

____

____

____

28. Please describe what you consider to be the program's major accomplishment during its existence.

____

____

29. To what do you credit this success?

____

____

EDUCATIONAL SCOPE OF THE PROGRAM

30. What formal or informal procedures do you use to evaluate the program?

____

____

31. Do students receive a grade to evaluate their progress in your EE program?

25.8% a_____Yes
16.1% b_____No
58.1% N.S.

32. Is academic credit available for student participation in your program?

25.8% a_____Yes
16.1% b_____No
58.1%

33. Does your program focus on one or a combination of the following environmental themes? Please check appropriate blanks.

10% a_____Energy (prod., dist., use) 6% g_____Land use planning
15% b_____Environmental quality 13% h_____Natural resource conservation
5% c_____Food (prod., dist., use) 11% i_____Maintenance of biological diversity
6% d_____Population change 4% j_____Maintenance of aesthetic environment
6% e_____Escalating consumptive trend k_____Human settlements 5%
6% f_____Environmental economics 13% l_____Ecology

34. Do the learning processes employed in your program develop from one or more of the following teaching methods? Please check appropriate blanks.

21% a_____Inductive (Discovery) teaching model d_____Inquiry method 18%
[illegible]% b_____Deductive (Expository) teaching model e_____Systems approach with mathematical equations, simulation modeling and computer programs 9%
[illegible] c_____Varied teaching strategies with emphasis on 1) firsthand experience 2) issue resolution, and 3) problem solving
f_____Other __________________ 3%

35. Which of the following descriptions best characterizes the learning climate which your program seeks to provide? Check appropriate blanks.

17% a_____Future orientation 13% d_____Value fair presentations
17% b_____Worldwide orientation 22% e_____Varied learning locales
30% c_____Positive orientation

36. Select items below which best characterize the expected learner growth resulting from your program. Choose one or more.

12% a_____Creativity enhancement 12% e_____Motivated action
29% b_____Attitude formation 24% f_____Cognitive growth
12% c_____Ethical development 0% g_____Other _______________
12% d_____Moral development

37. Does your school offer any student club(s) or extra-curricular activities in EE?

22.6% a_____Yes If YES, please specify level, title or description.
16.1% b_____No Level Title/Description
61.3% N.S.

_______________ _______________________________

_______________ _______________________________

38. Do any of the students exhibit noticeable leisure time, avocational, or vocational choice favoring environmental action after they complete the program?

25.8% a_____Yes If YES, please specify observed behavior.
9.7% b_____No
[illegible]5% N.S. _______________________________

____

39. Please indicate your relationship with the following organizations.

Aware of	Member of	
a 3	1	Ohio Conservation and Outdoor Education Association
b 1	1	Ohio Alliance for Environmental Education
c 1		Ohio Interagency Committee for Environmental Education
d 3		National Association of Environmental Education

40. Would you like to receive a copy of the summarized results and conclusions regarding this survey?

51.6% a_____Yes
3.2% b_____No
45.2% N.S.

THANK YOU FOR YOUR ASSISTANCE. PLEASE MAIL THIS COMPLETED SURVEY IN THE RETURN ENVELOPE WHICH WAS SUPPLIED.

The Journal of Environmental Education, Vol. 9, #4, pp. 10-19, Sum. 1978

TABLE 1: Responses to New Environmental Paradigm (NEP) Scale Items by the General Public Sample (GPS) and the Environmental Organization Sample (EOS), with Means, Standard Deviations, Statistical Significance of GPS-EOS Differences and Corrected Item-Total Correlations for each Item.[a]

	Items		SA[b]	MA	MD	SD	Mean[c]	S.D.	P	i-t
1.	We are approaching the limit of the number of people the earth can support.	GPS	34.6%	38.4%	19.5%	7.5%	3.00	.906	.001	.483
		EOS	71.8%	21.3%	5.0%	2.0%	3.63	.670		.358
2.	The balance of nature is very delicate and easily upset.	GPS	40.7%	39.4%	16.7%	3.2%	3.18	.811	.001	.490
		EOS	75.4%	18.0%	5.7%	1.0%	3.68	.625		.361
3.	Humans have the right to modify the natural environment to suit their needs.	GPS	6.9%	31.2%	41.0%	20.9%	2.76	.840	.001	.451
		EOS	1.5%	18.7%	28.4%	51.4%	3.30	.805		.382
4.	Mankind was created to rule over the rest of nature.	GPS	18.5%	28.0%	25.7%	27.9%	2.63	1.057	.001	.402
		EOS	2.3%	5.4%	15.6%	76.8%	3.67	.671		.348
5.	When humans interfere with nature it often produces disastrous consequences.	GPS	29.8%	46.4%	20.6%	3.2%	3.03	.781	.001	.394
		EOS	57.7%	34.5%	6.8%	1.0%	3.49	.661		.477
6.	Plants and animals exist primarily to be used by humans.	GPS	11.0%	27.6%	31.2%	30.2%	2.81	.970	.001	.400
		EOS	1.8%	6.1%	21.1%	71.0%	3.61	.672		.350
7.	To maintain a healthy economy we will have to develop a "steady-state" economy where industrial growth is controlled.	GPS	20.6%	49.3%	24.2%	5.9%	2.85	.790	.001	.415
		EOS	58.4%	33.2%	6.5%	1.8%	3.48	.690		.456
8.	Humans must live in harmony with nature in order to survive.	GPS	56.6%	39.0%	4.2%	0.3%	3.52	.583	.001	.455
		EOS	87.2%	11.8%	0.5%	0.5%	3.86	.400		.357
9.	The earth is like a spaceship with only limited room and resources.	GPS	42.2%	40.9%	12.2%	4.7%	3.21	.818	.001	.533
		EOS	86.4%	12.6%	0.5%	0.5%	3.85	.406		.328
10.	Humans need not adapt to the natural environment because they can remake it to suit their needs.	GPS	3.0%	12.4%	41.4%	43.3%	3.25	.766	.001	.394
		EOS	1.0%	3.3%	16.4%	79.3%	3.74	.558		.338
11.	There are limits to growth beyond which our industrialized society cannot expand.	GPS	24.1%	51.2%	19.8%	4.9%	2.94	.767	.001	.503
		EOS	71.9%	21.2%	5.9%	1.0%	3.64	.628		.425
12.	Mankind is severely abusing the environment.	GPS	35.5%	43.5%	17.9%	3.1%	3.11	.789	.001	.587
		EOS	83.0%	15.0%	1.7%	0.2%	3.81	.450		.479

[a] N = 806 for GPS and N = 407 for EOS.

[b] SA = Strongly Agree, MA = Mildly Agree, MD = Mildly Disagree and SD = Strongly Disagree.

[c] Means were computed after reverse scoring items 3, 4, 6 and 10.

general public (as one would expect). Thus, on every item a majority of the EOS "strongly" endorsed the NEP, either by "Strongly Agreeing" with pro-NEP items or "Strongly Disagreeing" with anti-NEP items. Further, except for item 3, the pro-NEP position was endorsed by over 90 percent of the EOS. Particularly striking is the fact that 99 percent of the EOS agreed that "Humans must live in harmony with nature in order to survive" and "The earth is like a spaceship with only limited room and resources." These extremely skewed (toward the NEP) responses of the EOS are reflected in their item means, which range from 3.30 for item 3 to 3.86 (out of a possible 4.0) for item 8, and are significantly higher ($P < .001$) than the GPS means for all 12 items.[6] Such results clearly suggest that the EOS strongly endorses the NEP.

In short, we can summarize the data on response distributions to the NEP items by noting that the general public tends to accept the content of the emerging environmental paradigm much more than we had expected, and that the environmentalists strongly endorse it. The former suggests that the proponents of the NEP may have been more successful in getting their message across to the public than has generally been imagined, and the latter indicates the extent to which the outlook of environmentalists has broadened considerably beyond their traditional "preservationist" ideology and more recent

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Survey Questionnaire Recipients by School Type

Hamilton County Public Schools

- Finneytown Local
    - Cottonwood Elementary
- Forest Hills Local
    - Curriculum Coordinators - K-8, 9-12
- Northwest Local
    - Curriculum Coordinator - 7-12
    - Taylor Elementary
- Oak Hills
    - Curriculum Coordinators - 2 High School, 1 Elem.-Interm.
- Southwest
    - Curriculum Coordinator
- Three Rivers
    - Curriculum Coordinator
    - Taylor High

Independent School Districts, Hamilton County

- Cincinnati Public
    - Curriculum-Instruction Coordinator
- Deer Park
    - Superintendent
- Greenhills-Forest Park
    - Administrative Assistant
- Indian Hills Exempted Village
    - Indian Hills High
    - Wyandot Elementary
- Lockland City
    - Curriculum Coordinator
- Loveland City
    - Loveland Miami Elementary
    - Loveland Middle
    - Loveland-Hurst High
- Madeira
    - Superintendent
- Mariemont
    - Mariemont High
- Mt. Healthy
    - Forest Elementary
    - South Junior High
    - Mt. Healthy High
- North College Hill
    - Elementary Supervisor
    - North College Hill High
- Norwood City
    - North Norwood Elementary
    - Norwood High
- Princeton City
    - Princeton Nature Center
    - Princeton High

- Reading City
  - Reading Community Middle
  - Reading Community High
- St. Bernard-Elmwood
  - Administrative Assistant
  - St. Bernard-Elmwood Place High
- Sycamore
  - Maple Dale Elementary
  - Edwin H. Greene Middle
  - Sycamore Junior High
  - Sycamore High
- Wyoming
  - Wyoming Middle
  - Wyoming High
- Greak Oaks Joint Vocational Schools
  - Great Oaks Agriculture Supervisor
  - Cincinnati Zoo Natural Resources Management Program

Cincinnati Archdiocese Schools

- East Side Schools
  - Cure of Ars Elementary
  - Guardian Angles High
  - McNicholas High
  - Our Lady of Sacred Heart Elementary
  - St. Francis Seraph Elementary

- West Side Schools
  - Mother of Mercy High
  - Our Lady of Victory Elementary
  - St. Catharine Elementary
  - St. Dominic Elementary
  - St. Teresa, the Little Flower Elementary
  - St. Xavier High

Other Parochial Schools

- Bethany School, K-8
- Grace Lutheran School, K-8
- Landmark Christian School, K-6, 7-12
- Yavneh Day School, K-8

Private Schools

- Cincinnati Country Day, K-6, 7-12
- Summit Country Day, K-8, 9-12
- Lotspeich , K-6
- Doherty, K-6
- Seven Hills Middle, 7-8
- Seven Hills Upper, 9-12
- Springer Elementary

Surveys Received by Date Listed

May 10, 1983 (17 received) (8 of 17 returned are private schools)

Indian Hill - Wayne Fricke (High S.)

Mariemont - George Collins (7-12)

Great Oaks Joint Vocational - Robert Phillips (11-12)

Landmark Christian - R. Schrenker (K-12)

Loveland Hurst - Steve Herbold (9-12)

Mother of Mercy - Carolyn Rost (9-12)

Seven Hills Upper School - Steve Chapman (9-12)

Taylor Elem. of Northwest Local - Gerald Roberts (K-6)

Grace Lutheran - Jim Schroeder (K-8)

Oak Hills Local - Ken Miller (7-12)

Oak Hills High - James Vanzant (7-12)

Frost Elem. of Mt. Healthy - Diana Klenk (K-6)

Cincinnati Public - Jerome Braun (9-12)

Bethany School - Paul Dawson (K-8)

Seven Hills Schools - Patricia Voss (K-6)

St. Francis Seraph - Sister Evelyn (1-8)

Guardian Angels - Gwyn Bush (1-8)

May 11, 1983 (8 surveys received) (1 of 8 returned is private school)

Our Lady of the Sacred Heart - David S. Lucas (1-8)

Sycamore High - Tom Bohmer (9-12)

Green Hills - Forest Park District (K-12)

North College Hill - Lee Koehler (7-12)

Three Rivers District - Ed Hearn (K-12)

Loveland Middle School - Ed Lenney (7-8)

Southwest Local District - Kay Bowling (K-12)

Wyoming Elementary School - Betsy Evans (4-8)

Surveys Received Continued

May 18, 1983 (3 received) (1 of 3 is private school)

Northwest Local - Elizabeth S. Mefford(K-12)

Reading - Dick Thielmeyer (9-12)

Yavneh Day School - Ray Solomon (K-8)

May 19, 1983 (3 received) (0 of 3 is private school)

Cin. Public , Vocational Agriculture Dist #11 - Richard S. Mills (11-12)

Norwood Public - Karen DiPUccio (K-6)

Sycamore - Bud Corum (7-8)

May 27, 1983 (7 received) (1 of 7 is private school)

Indian Hill Exempted Village - Robert C. Terwillegar (K-7)

Mt. Healthy High School - Mrs. Ann Richburg (10-12)

North College Hill - Marian Schott (K-6)

Oak Hills - Jane T. Pittman (3-6)

Our Lady of Victory (Archdiocese of Cin.) - Ms. Chris Hennies (4-8)

Princeton City Schools - Charles Lambert / Carolyn Cook (K-6)

Princeton High School - Hayward Ball (9-12)

Greater Cincinnati Community Resources

* means a reply was received concerning educational goals and objectives.

Camp Campbell Gard (YMCA)*
Camp Kern (YMCA)
Cincinnati Museum of Natural History*
Cincinnati Nature Center
Cincinnati Recreation Commission
    Avon Woods Outdoor Education Area
    California Woods Outdoor Education Area*
    Dunham Woods Outdoor Education Area
    Laboiteaux Woods Outdoor Education Area
Cincinnati Park Board*
Cincinnati Zoo*
Civic Garden Center of Greater Cincinnati
Hamilton County Park*
Joy Resident Education Center*
Krohn Conservatory*
Spring Grove Cemetery*

26. RESOLUTION ON ENVIRONMENTAL EDUCATION

I RECOMMEND that the State Board of Education ADOPT the following RESOLUTION:

WHEREAS, scientists are warning that pollution of the earth's environment may present mankind with one of the most serious threats to life in recorded history; and

WHEREAS, this condition is the result of degradation of our natural resources by all segments of society; and

WHEREAS, the threat to our environment includes elements such as the pollution of the air and water; the distribution of the population; the destruction of wildlife habitats; and the disruption of other complex and delicate inter-relations which govern the stability of this planet; and

WHEREAS, degradation of our life systems may reach a crisis state in the near future; and

WHEREAS, education offers the potential for the knowledge and understanding necessary to equip society with constructive alternatives and positive actions to assist in solving our pressing environmental problems;

NOW, THEREFORE, BE IT RESOLVED, that the Board of Education of the State of Ohio hereby, and it does, encourage elementary and secondary schools to take appropriate means to incorporate in the school curriculum a study of the inter-relationships between all forms of life and the environment, with an emphasis upon the immediate necessity for reversing the present trend as well as repairing damage already done to the environment.

BE IT FURTHER RESOLVED, that the Board of Education of the State of Ohio hereby, and it does, authorize the Superintendent of Public Instruction to appoint a staff task force and a state advisory committee to offer leadership in advancing educational effectiveness for improved environmental education.

10. RESOLUTION TO EXPAND INSTRUCTION IN THE AREA OF ENVIRONMENTAL EDUCATION

I RECOMMEND that the State Board of Education ADOPT the following Resolution:

WHEREAS the United States and the other nations of the world are becoming increasingly aware of worldwide environmental concerns; and

WHEREAS the United Nations and other international and national organizations are moving to cope with increasingly complex environmental problems and their economic impact; and

WHEREAS the State Board of Education fully recognizes the importance of environmental education as a vital component of the school curriculum; and

WHEREAS Section 3301.07(L), Revised Code, directs that the State Board of Education shall require all public schools to emphasize and encourage, within existing units of study, the teaching of energy and resource conservation, beginning in the primary grades: Therefore, be it

RESOLVED, That the Ohio Department of Education continue to provide informational and consultant services to the elementary and secondary schools in Ohio and encourage the expansion of instruction and student experiences in environmental education which are known to include such themes as energy, population, transportation, natural resource conservation, marine and aquatic education, environmental economics, environmental quality, food production, ecology, and similarly interrelated themes; and, be it

FURTHER RESOLVED, That the contents of this resolution be communicated to the leadership of Ohio school districts as well as to the Governor, the Legislature, and Ohioans in general.

It was moved by Mr. Kisner and seconded by Mr. Kelty that the above recommendation be approved. The President called for a voice vote on the motion. Motion carried.

I certify that the above is a true and correct copy of the action taken by the State Board of Education at its meeting on March 10, 1980.

Columbus, Ohio
March 11, 1980

Franklin B. Walter
Franklin B. Walter, Secretary